ON NATURALISM

by

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STATEMENT OF DISSERTATION APPROVAL

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ABSTRACT

This dissertation is about naturalism—a philosophical view that is nothing short of orthodoxy today. Orthodoxies tend to go uncontested and unexamined, but they should not be. The bulk of this dissertation constitutes such an examination. Three distinct endeavors are undertaken. The first is to get a clear, concise, working description of 'naturalism' such that it can be evaluable in subsequent chapters. This is not an easy task given the wide range of ways in which naturalism is expressed, but I pare down the view to two distinct theses—one compound epistemological thesis and one ontological thesis. These theses are broad enough that they allow for strong and weak readings, and I give some ways of doing this. The next major task is epistemological. I give arguments for how epistemological and ontological naturalism can be given *prima facie* justification. I follow this by putting pressure on the epistemological thesis to see how it holds up in the face of potential defeaters. The formulations of epistemological naturalism that are most defensible are those that are weak and thus not all that controversial. Robust expressions are ruled out. Finally, I follow the same procedure for ontological naturalism. Here, however, I put pressure on the thesis by using modal metaphysics as a case study. I find that no modal theory on offer can be accommodated by robust interpretations of ontological naturalism, and so the thesis must be tempered or weakened to allow for objective modality in the world. My conclusion here is thus somewhat analogous to that in the case of epistemological naturalism. The overall upshot

is that the only varieties of naturalism that should enjoy a position of orthodoxy are those that are quite benign and uncontroversial.

For Gillian—a ray of light in this dark tunnel

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CHAPTER 1

INTRODUCTION

It is common to hear the suggestion that philosophy has undergone a naturalistic turn in the last half-century or so. On the face of it, this seems to indicate a kind of major change, perhaps even on par with an earlier linguistic turn or the still earlier epistemic turn in philosophy. So naturalism has become commonplace; it is the new orthodoxy. Determining the answer to the question "what percentage of a group must endorse a view for it to be orthodox?" is no easy task, but it is clear that naturalism is by far the majority view in philosophy. In 2009, PhilPapers produced a thorough survey entitled "What Do Philosophers Believe?" The survey results were finally published just last year.[1] The survey is a straightforward questionnaire asking professional philosophers, graduate students and undergraduates in philosophy, and a group with no affiliation with philosophy to either confirm or disconfirm their belief in a host of traditional views in philosophy. There were 3226 respondents, including 1803 philosophy faculty or PhDs.

When asked about naturalism, the results were as follows:

Philosophy Faculty:

Accept or lean toward: naturalism	49.8% (464/931)
Accept or lean toward: non-naturalism	25.8% (241/931)
Accept or lean toward: other	24.2% (226/931)

[1] David Bourget and David C. Chalmers, "What Do Philosophers Believe," *Philosophical Studies*, vol. 170 (2014), 465-500.

Philosophy Graduate Students:	
Accept or lean toward: naturalism	50.3% (417/829)
Accept or lean toward: non-naturalism	25.8% (214/829)
Accept or lean toward: other	23.8% (198/829)

So naturalism has allegiance from approximately half of professional philosophers and graduate students, and is held by roughly double the amount of people when compared to the closest competing view. A few observations about this are worth making. In the first place, you might think—true to the excluded middle—that either naturalism is true or that non-naturalism is true. The category of 'other' seems odd in this context. What other options are there? We are not told, but apparently a significant percentage of respondents think there are some.

There are also some observations about the numbers that are significant.[2] For one, there are other questions in the survey that have larger answer discrepancies than the naturalism question. These include whether we have *a priori* knowledge (71% affirm, 18% deny); realism about the external world (82% affirm, 5% are skeptical); and cognitivist moral judgments (66% affirm, 17% deny). Should not we think of those positions as being "more" orthodox or more significant than naturalism given the statistical discrepancy? I do not think so. Those issues are important, sure, but they also have a relatively limited scope. Naturalism, on the other hand, has entailments and implications relevant to a very broad range of philosophical issues.[3] Importantly, those issues include the one's just listed: whether we have *a priori* knowledge, realism about

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[2] Interestingly, PhilPapers ran a complement metasurvey asking participants to predict the results of the actual survey. Those that cast predictions about the naturalism question gave a higher percentage (57.3) for those they thought would subscribe to naturalism.

[3] I explain this in much greater detail in later chapters. The most prominent of those issues are empiricism, scientific realism, and physicalism.

the external world, and moral judgments. What this means is that one's stance with regard to naturalism will likely affect one's stance on many of the other philosophical views in the survey, perhaps more so than any other position surveyed. In other words, naturalism stakes a much broader claim than a typical philosophical thesis. That is one of the reasons its place as orthodoxy is important.

This dissertation is *about* naturalism—a viewpoint that, it should be clear, is as close to philosophical orthodoxy as anything we have today. Since orthodoxies tend to be largely uncontested, it is good to subject them to examination or give them a rethink now and then. The remaining chapters of this dissertation are such an examination. Despite being more or less commonplace, naturalism has seen a fair amount of defenses in recent years, suggesting that it is something in need of a defense—or at least that naturalism is a thesis or research program that needs to be sufficiently clarified.[4] Clarification seems to be one of the bigger hurdles for naturalism. Consider Barry Stroud's sentiment on the state of play in the naturalism dialogue:

> "Naturalism" seems to me … rather like "World Peace." Almost everyone swears allegiance to it, and is willing to march under its banner. But disputes can still break out about what it is appropriate or acceptable to do in the name of that slogan. And like world peace, once you start specifying concretely exactly what it involves and how to achieve it, it becomes increasingly difficult to reach and to sustain a consistent and exclusive "naturalism." There is pressure on the one hand to include more and more within your conception of "nature," so it loses it definiteness and restrictiveness. Or, if the conception is kept fixed and restrictive, there is pressure on the other hand to distort or even to deny the very phenomena that a naturalistic study—and especially a naturalistic study of human beings--is supposed to explain.[5]

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[4] For an example of such an attempt, see footnote 7 of this chapter. Strawson tows a hard line to distinguish the real naturalist from the "noturalist" – that self-proclaimed naturalist who actually endorses something other than naturalism.

[5] Barry Stroud, "The Charm of Naturalism," in *Naturalism in Question*, ed. Mario De Caro and David Macarthur (Cambridge: Harvard, 2004), 22.

Another cheeky claim along these lines is given by Elliot Sober, who thinks that characterizing one's view as naturalistic is like claiming that it contains "no artificial ingredients."[6] That slogan is widely appealing, both in the grocery store and in philosophy, but its hard to tell what exactly is being claimed.

So 'naturalism' means different things to different people. There is even a bit of infighting among naturalists about how to best distinguish "real" naturalism from "noturalism," that pesky ersatz or counterfeit version of the view.[7] This is perhaps for good reason, since it is important to get a clear view of naturalism. I say it is important if only for the reason that so much is at stake given the breadth with which naturalism's tentacles spread across subdisciplines in philosophy. This dissertation is meant to contribute to this dialectic in two main ways: (i) by attempting to get clear on how naturalism should be formulated (and why), and (ii) by examining what I take to be some of the central commitments of naturalist philosophy that have not been suitably discussed in the literature. Whether and, more importantly, how these commitments can be upheld is my primary focus.

I try to do all of this while avoiding becoming mired in a definitional squabble. It is not productive to scrimmage over labels, but it is important to evaluate the views or theses those labels are meant to represent. I do this by presenting some central features of the naturalist program to establish a sort of baseline from which to examine naturalism as a philosophical thesis (or system, or set of views, or research program, or what have

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[6] I get this example from Peter Godfrey-Smith's *Theory and Reality* (Chicago: University of Chicago Press, 2003), 150.

[7] As a recent example, see Galen Strawson's Romanell Lecture, "Real Naturalism," *Proceedings and Addresses of the American Philosophical Association*, vol. 86, issue 2 (November 2012), 125-154.

you). This sets the stage for the evaluation of naturalism that follows. I will now give a brief run-down of how the dissertation is laid out. The body of the dissertation is broken down into four chapters. These can be taken more or less independently of the others, but together they form a nice overall picture.

The business of Chapter 2 is to get a precise working description of naturalism. This is tricky simply due to the sheer number of ways that 'naturalism' has been expressed. Nonetheless, I reduce the various formulations of naturalism into two fundamental claims—one epistemological and one ontological. Those two descriptions are precise enough to make them evaluable (which is the goal of subsequent chapters), and yet broad enough to cover the range of ways both epistemological and ontological naturalism have been expressed. The naturalist of either stripe should find my descriptions amenable to their view. As a way of bolstering why I formulate naturalism in the way that I do, I offer some historical observations about the development of naturalism—with Hume as the progenitor. The contemporary varieties of epistemological naturalism I discuss are markedly distinct in some ways, but they are united in still more; they each satisfy the description I use to express the view. At any rate, with a working description of our two naturalisms in hand, the actual evaluation of naturalism can be taken up in the remainder of this dissertation.

Chapter 3 contains a number of distinct arguments. I first show that naturalism, epistemological and ontological, can come in degrees. Neither variety is thus a rigid view. While in Chapter 2 I made my description of epistemological naturalism precise by noting two conjunctive components, I here show how there is fudge room in how those components are interpreted. This is a virtue for epistemological naturalism in that

it turns it into somewhat of a moving target. I then support my reductive approach to characterizing naturalism. There are a host of views that purport to be varieties of naturalism, but I suggest that they each depend on either epistemological or ontological naturalism in basic ways; thus my regard for considering epistemological and ontological naturalism to be fundamental. The real meat of the chapter comes in a defense of how naturalism (again, both varieties) is justified. This is more complicated for epistemological naturalism than for ontological naturalism, since there is less fudge room in how ontological naturalism can be expressed. This section is the most important of those in Chapter 3 because it sets the stage for my critical arguments in the two subsequent chapters. Finally, I argue that there is an interesting dependence relation between our two varieties of naturalism. Namely, subscribing to ontological naturalism demands subscribing also to epistemological naturalism, but the reverse is not true. The epistemological naturalist need make no commitment to the ontological variety.

Chapter 4 consists in a critical evaluation of epistemological naturalism. I previously argued that the view enjoys *prima facie* justification in a variety of epistemological frameworks, and here I put pressure on that *prima facie* clause. A series of potential defeaters for the justification of epistemological naturalism are considered. Each of these defeaters is aimed at one of the components of epistemological naturalism that I delineated in earlier chapters. I conclude that the most robust or strong expressions of naturalism are not tenable theses to hold due to their being subject to the defeaters discussed. The defeaters may be considered independently of one another, but they form a strong cumulative case against robust epistemological naturalism. Left standing, however, are the weaker expressions. Such expressions are thus the best one's for the

epistemological naturalist to endorse.

In Chapter 5 I offer a critical appraisal of ontological naturalism using metaphysical views of modality as a case study. The central target of my criticism here is the way in which ontological naturalism is expressed. Baldly, the view is that the spatio-temporal world—that is the subject of study for the natural sciences—is all there is. Difficulties arise in how the natural sciences deal with items that are *apparently* non-natural, namely, abstracta. Abstracta are ineliminable in the sciences, and yet they do not seem to fit into the world of the ontological naturalist. Using modality as a case study into abstracta and their use in the sciences, I conclude that we do not yet have a modal theory on offer that fits the constraints of ontological naturalism despite some valiant efforts. Three expressly naturalistic modal theories are examined—two in detail and one more peripherally. The overall upshot of the chapter is that, given the case of modal metaphysics alone, ontological naturalism is a weak thesis. This is because of the ontological allowances that must be made to accommodate a modal theory.

In Chapter 6 I recapitulate and wrap up with some concluding remarks. The broad conclusion is reiterated: that naturalism, as a set of theses that ground a way of approaching philosophy, has some things to recommend it and some worries that accompany it. I focus on the worries, if only so they can be corrected such that the naturalism project can be made clearer and more precise.

CHAPTER 2

NATURALISM DEFINED

In the last chapter I suggested that philosophy has undergone a "naturalistic turn" in the past half-century or so. As such, it is now common to see explicitly expressed naturalistic approaches in just about every problem space that has plagued philosophy. These explicit announcements of a view being "naturalistic" often seem to be about lending stature to the view or account being offered; if the view is naturalistic, it has at least a chance of being correct. Hilary Putnam cheekily claims that this phenomenon resembles the announcements in the literature of the Soviet Union that the view put forth lines up with that of Comrade Stalin.[1] The point is that naturalism is widely considered to be the going view (or method) with which one should align one's own view(s).

The purpose of this chapter is to characterize naturalism in such a way that it will be evaluable in subsequent chapters. Again, one difficulty with this task is that naturalism, as a view or stance or doctrine, is described in such a variety of ways that it is hard to pin down exactly what unites the views described. In some sense naturalism has been described *ad nauseum* and yet remains notoriously ill defined. Some have concluded from this variety that naturalism is best categorized not as a view or thesis, but

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[1] Hilary Putnam, "The Content and Appeal of 'Naturalism'," in *Naturalism in Question*, Mario de Caro and David Macarthur, eds. (Cambridge, MA: Harvard University Press, 2004), 59.

as a general approach to philosophical theorizing; perhaps we should think naturalism as a "research program."[2]

I do not share this view. Sure, discussions of naturalism seem to revolve around a set of themes that appear nebulous—a high respect for the natural sciences, an aversion to the *a priori*, etc.—but there remains a core that most expressions of naturalism have in common. My task here is to examine this core with the intent of presenting a friendly expression of naturalism.[3] My approach is reductive in that I pare down various versions of naturalism into two distinct philosophical doctrines, one epistemological and one metaphysical. I am happy to admit that commitment to either variety of naturalism (but especially the epistemological) can come in degrees. Perhaps this is due to what Quine calls "migrating semantics"—the idea that 'naturalism' as a concept can be tweaked to serve specific purposes. Perhaps it is due to an issue of scope, since there is disagreement on how far 'naturalism' is thought to extend in issues both epistemological and ontological. The core of naturalism is present in both of these alternatives, so I do not take the degrees of commitment to be detrimental to the project of formulating an expression of naturalism. My expression can thus be thought of as a *description*—one that is loose enough to cover the range of expressions given below. At any rate, pinning down a precise expression of the view is a necessary evil if naturalism is to undergo any evaluation.

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[2] For example, see Michael Rea, *World Without Design: The Ontological Consequences of Naturalism* (New York: Oxford, 2004), 65-73.

[3] "Friendly" in the sense of being acceptable to self-avowed naturalists.

2.1: Epistemological Naturalism

I submit that epistemological naturalism has two components that are not easily separated. The first is a claim about epistemology as a discipline: (i) what the procedures and methods of the sciences have taught us about the world and ourselves will produce an epistemology with empirical content—a systematic factual description of how we come to know things. The second feature concerns the proper avenue(s) for achieving the aims of epistemology (say, knowledge or justification for holding beliefs): (ii) that an experiential or empirical method, as exemplified in the sciences, is the only, or at least the best, way of knowing. Stated provisionally then, epistemological naturalism is the view that, given the overwhelming success of the natural sciences in providing knowledge about the world, the (empirical) methods of the sciences should play the central role in doing epistemology. One obvious corollary to this is that *a priori* theorizing is viewed skeptically and thus not a worthy enterprise for gaining knowledge. Such a stance is exemplified as early as Hume (if not earlier), and today is much more commonplace. Below I will show how these two features pop up consistently in the development of epistemological naturalism, beginning with Hume.

2.1.1 Epistemological Naturalism in Hume

Naturalism is not a view that arrived suddenly on the scene. Rather, it has been developed over quite a long period of time.[4] There were surely naturalistic inclinations here and there before the 18th century, but Hume is best thought of as the progenitor of contemporary naturalism in the sense that much of what constitutes discussions of

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[4] For a similar claim, but made with reasons with which I do not agree, see Philip Kitcher, "The Naturalists Return," *The Philosophical review*, vol. 101, no. 1 (January 1992), 53-114.

naturalism at present are found in some form in Hume's *Enquiry* (EHU).[5] We find in Hume a robust but imprecise epistemological naturalism and a somewhat less developed and more controversial ontological naturalism.[6]

At the beginning of the *Enquiry*, Hume equates moral philosophy, which for him includes every topic concerning the operation of the human mind, with the "science of human nature" (EHU 1.1). Dissatisfied with past philosophical accounts of the mind and its use of reason, Hume endeavors to study the mind via an experimental method similar to that which had proved wildly successful in the various disciplines of natural philosophy.[7] ('Natural philosophy' for Hume is more or less synonymous with what we now know as the natural sciences (EHU 7.2), or at the very least is its own branch of natural science along with physics, chemistry, and astronomy (EHU 7.30-31).) At any rate, successful progress in learning about the mind and its operation requires treating this epistemological exercise as we would any truly scientific endeavor—by limiting oneself to experiential reasoning and experimental observations.

This shift in epistemological method is the first significant move toward contemporary epistemological naturalism as I have described. For example, notice how Hume's scientific approach to the mind matches the first feature of epistemological naturalism identified above. Studying the mind scientifically, for Hume, will produce an

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[5] Also, this is true to a lesser degree in the earlier Hume. I am using the *Enquiry* simply because it is the work that Hume endorsed as the *only* legitimate source of his actual "sentiments and principles."

[6] I say that Hume's ontological naturalism is controversial because it is not clear that Hume endorses anything like what we now call ontological naturalism. In fact, there is some textual evidence that Hume stakes no claim here. I discuss this issue in detail in Section 3.5 in the next chapter.

[7] See also the annotations in Hume's *An Enquiry concerning Human Understanding*, Tom L. Beauchamp, ed. (New York: Oxford, 1999), 216-217.

epistemology with empirical content, or a factual, experiential description of how the mind works and, *ipso facto,* how we come to know things. These topics occupy the majority of Hume's *Enquiry*. As we will see below, Hume's method is commandeered and made precise much later in Quine's development of his "epistemology naturalized." Notice also how Hume's project is in concert with the second feature I identified. He sees the primitive natural sciences to be making huge strides of progress in his day, which leads him to claim that the methods used in those disciplines are the *only* legitimate ones for doing philosophy. Hume is quite adamant about this point, and he uses it repeatedly in the *Enquiry* to distance himself from the rationalists, particularly the Scholastics. For example, consider Hume's derision of classical metaphysics:

> Here indeed lies the justest and most plausible objection against a considerable part of metaphysics, that *they are not properly a science*; but arise either from the fruitless efforts of human vanity, which would penetrate into subjects utterly inaccessible to the understanding, or from the craft of popular superstitions, which, being unable to defend themselves on fair ground, raise these intangling brambles to cover and protect their weakness (EHU 1.11).[8]

The prime motivation for adopting this "new philosophy" with its experimental methodology is to escape the brambles that have heretofore ensnared philosophers. Part of Hume's complaint against how traditional philosophy was done is its reliance on *a priori* claims, which he took to be "utterly inaccessible to the understanding."

It is important to emphasize Hume's reasons for rejecting *a priori* reasoning, since this is one of the central features of contemporary epistemological naturalism. A short explanation is as follows: Hume has set out to study, via his own proto-naturalistic method, the human mind and its operation. The mind itself falls under the domain of enquiry that Hume calls "matters of fact," which, roughly, encompasses everything that is

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[8] Italics mine.

not "either intuitively or demonstratively certain" (EHU 4.1). The latter fall under what Hume dubs "relations of ideas." The simplest criterion for distinguishing these two objects of enquiry is that the contrary of any relation of ideas will be a contradiction; not so for matters of fact (EHU 4.2). Broadly, one can think of relations of ideas in the way that contemporaries think of analytic propositions—those whose truths are knowable as soon as the concepts involved are understood. For example, as soon as you understand that a square necessarily has four sides, it follows that its contrary, "a square does not have four sides," is a contradiction. Mathematical and logical considerations exhaust the content of relations of ideas and, indeed, Hume's examples of relations of ideas fall under the "sciences" of geometry, algebra, and arithmetic (EHU 4.1). In other words, any object of inquiry that falls under the domain of what we know as the sciences, including the nature and operation of the mind, will be considered to fall under matters of fact. It is in the domain of matters of fact that Hume tries out his naturalistic, empirical methodology with respect to the mind.

The important thing to note in Hume's rejection of *a priori* reasoning in dealing with matters of fact has to do with the nature of the evidence available. For Hume, the evidence is exhausted by sensory testimony, memory, and the relation of cause and effect (EHU 4.3-4). Since what we know of the relation of cause and effect can come only via experience (EHU 4.6), it follows that all of our evidence concerning matters of fact is always *a posteriori*. Hume's experiential methodology thus leaves no room for *a priori* reasoning. This point is stressed repeatedly, e.g.,

> When we reason *a priori*, and consider merely any object or cause, as it appears to the mind, independent of all observation, it never could suggest to us the notion of any distinct object, such as its effect; much less, show us the inseparable and inviolable connexion between them (EHU 4.13).

With *a priori* reasoning in the domain of matters of fact as a nonstarter, Hume takes his experiential methodology to work on analyzing the nature and operation of the mind. I take Hume's method to depend on the conjunction of three theses: (i) that the mind should be studied in the manner of the sciences, (ii) that experiential evidence is all that is available with respect to matters of fact, and (iii) that *a priori* reasoning has no place in the "science of human nature" or any scientific endeavor whatever. If this is right, Hume truly is the progenitor to contemporary epistemological naturalism—which takes each of those theses as central.

2.1.2: Epistemological Naturalism post-Hume

So robust epistemological naturalism was kickstarted by Hume and has really taken off in the last half-century. Where did naturalism go in the period between the mid 18th century and the mid-20th? Well, it did not go anywhere, apparently. Naturalist philosophers (who might not have described themselves thus) appear occasionally in the 19th century, most notably Auguste Comte—the founder of positivism whose approach had much affinity with Hume's. There seems to be no settled view about who coined the term 'naturalism,' but it was in use by the end of the 19th century. More importantly, it is used in describing a view that is markedly similar to both Hume's view as I have depicted it and to contemporary expressions of epistemological naturalism. For example, Arthur James Balfour, writing in 1895, describes naturalism as a set of doctrines, among them

> ...that we may know 'phenomena' and the laws by which they are connected, but nothing more. 'More' there may or may not be; but if it exists we can never apprehend it: and whatever the world may be 'in its reality' (supposing such an expression to be otherwise than meaningless), the world for us, the world with which alone we are concerned, or of which alone we can have any cognizance, is that world which is revealed to us through perception, and which is the subject-

> matter of the natural sciences. Here, and only here, can we discover anything which deserves to be described as knowledge. Here, and only here, may we profitably exercise our reason or gather the fruits of wisdom.[9]

Experience is in. The *a priori* is out. Anything apart from natural phenomena is unknowable. The litany of "doctrines" that Balfour takes to constitute naturalism have a deep rapport with both Hume's version and contemporary efforts to express the view. The latter is detailed below.

First, however, it is worth noting two other features of the proto-naturalism climate that have not changed much (if at all). The first is that we have not yet gotten a precise definition of 'naturalism.' The term was not available to Hume, obviously, but his epistemological program is likewise imprecise; it takes a lot of digging around in the *Enquiry* to piece it together. Much later in 1895 (the same year Balfour's *Foundations of Belief* was published), Lloyd Morgan notes that naturalism "is not at present blessed (or the reverse) with a stereotyped creed; it is rather a point of view or mental attitude; and those who adopt this attitude have been led to conclusions which are in many respects markedly divergent."[10] With respect to this feature, it seems that not much has changed (recall the quoted passage from Barry Stroud in the last chapter). I mention this similarity both as a point of interest and commonality and as a call to note the difficulty in coming up with a precise expression of both epistemological and ontological naturalism, which is the overall aim of this chapter. I hope that noting the historical development of naturalism will at least clarify why I have characterized naturalism in the way I have.

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[9] Rt. Hon. Arthur James Balfour, *Foundations of Belief* (New York: Longmans, Green, & Co., 1895), 7.

[10] Lloyd Morgan, "Naturalism," *The Monist*, Vol. 6, No. 1 (October, 1895), 76.

The second feature of proto-naturalism that has not much changed I mention simply to note its virtue: there is an overall undertone of humility in the view. For example, Hume notes that his view is not capable of answering every question that might be asked of it, and notes that we should "be modest in our pretentions" and be aware of the difficulties in formulating any such view (EHU 4.14). Morgan, once he has listed what he takes to be the central tenets of naturalism, admits "whether they can be fully substantiated or not is a matter for the future rather than for the present to decide."[11] Despite the apparent imperfections of the naturalistic stance, however, he gives us motivation, much like Hume, for why it is still worthwhile:

> The unification of all belief into an ordered whole, compacted into one coherent structure under the stress of reason, is an ideal which we can never abandon; but it is also one which, in the present condition of our knowledge … we seem incapable of attaining. For the moment we must content ourselves with something less than this.[12]

As a contemporary example, Michael Devitt admits that epistemological naturalism hardly counts as a serious theory, simply because we don't have the satisfactory details of the empirical way of knowing that we would like to have.[13]

In the brief historical development of naturalism just given, a lot of significant figures and movements have been left out. However, my intent here is simply to draw out the similarities between much older views and contemporary expressions of naturalism. As we move on to recent figures, I hope these similarities will be made clear.

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[11] Morgan, 82.

[12] Ibid., 82-83.

[13] Michael Devitt, "Naturalism and the A Priori," *Philosophical Studies* 92, No. 1 (October 1988), 49.

2.1.3: Epistemological Naturalism in Contemporary Philosophy

Contemporary epistemological naturalism begins with W.V. Quine—who systematized and made precise much of what Hume argued for—as its paragon. The most obvious of these similarities is Quine's call to abandon any sort of "first philosophy" that is prior to natural science.[14] Science alone, however primitive, serves as the means by which we learn about the world. In his words, "In our pursuit of truth about the world we cannot do better than our traditional scientific procedure, the hypothetico-deductive method."[15] It is not as if Quine merely admired scientific methods as a guide to doing philosophy. Again like Hume, he claims that philosophy should be done *as a science*, since the two modes of inquiry are in fact continuous (or ought to be). Quine does not think that we should abandon philosophy as a hopeless endeavor (and neither did Hume), but rather that we should change how philosophy is done. Consider Quine's comments on his "new" theory of naturalized epistemology:

> Is this sort of thing still philosophy? Naturalism brings a salutary blurring of such boundaries. Naturalistic philosophy is continuous with natural science. It undertakes to clarify, organize, and simplify the broadest and most basic concepts, and to analyze scientific method and evidence within the framework of science itself. The boundary between naturalistic philosophy and the rest of science is just a vague matter of degree.[16]

Using the framework of science as a constraint for doing philosophy means, for most subdisciplines within the field, jettisoning much of the method and theory that has gone before.

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[14] W.V. Quine, *Theories and Things* (Cambridge, MA: Belknap/Harvard University Press, 1981), 67-72.

[15] Quine, "Naturalism; or, Living within One's Means," in *W.V. Quine: Confessions of a Confirmed Extensionalist and Other Essays*, Dagfinn Follesdal and Douglas B. Quine, Eds. (Cambridge, MA: Harvard University Press, 2008), 467.

[16] Ibid., 467.

For Quine this is particularly evident in epistemology. Traditional epistemology is a distinctly philosophical enterprise that examines the connections between evidence and notions like belief, knowledge, and justification. While the traditional methods for doing epistemology are wrongheaded by Quine's lights, he remains convinced that the project of epistemology itself is a valuable one. As such, he simply calls for us to change how epistemology is done by incorporating it into science:

> Naturalism does not repudiate epistemology, but assimilates it to empirical psychology. Science itself tells us that our information about the world is limited to irritations of our surfaces, and then the epistemological question is in turn a question within science: the question how we human animals can have managed to arrive at science from such limited information.[17]

Recall the first feature of epistemological naturalism that I identified above: that what the procedures and methods of the sciences have taught us about the world and ourselves will produce an epistemology with empirical content—a systematic factual description of how we come to know things. This is exactly what Quine is arguing for. The traditional epistemological question of how evidence leads to and otherwise relates to knowledge and belief is one that belongs to cognitive science or empirical psychology. If we want a sound theory about the production of knowledge, belief, justification, etc., we need look no further than an empirical process: external stimuli "enter" our bodies by "irritating our surfaces," which sets off a series of neural impulses within the brain that lead to rudimentary observation sentences like "It's raining." Such observations and compounds thereof can then be tested experimentally with increasing levels of complexity, eventually producing answers to specific epistemological questions about *how* we get to knowledge

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[17] Quine, *Theories and Things*, 72. Note that by "science," Quine means "knowledge of the world."

or belief.[18] The second feature of epistemological naturalism that I identified falls naturally into place in Quine's epistemological schema: the experiential or empirical method, as exemplified in the sciences, is the only, or at least the best, way of achieving the aims of epistemology precisely because it is testable and thus affords a measure of reliability.

Quine has set the bar for what qualifies as bona fide epistemological naturalism, and most contemporary naturalists concerned with things epistemological have taken his lead to some extent or other. For example, Michael Devitt defends a Quinean naturalized epistemology that in some ways is more explicit and robust than Quine's own. Devitt claims "there is only one way of knowing, the empirical way that is the basis of science (whatever that way may be)."[19] One implication of this concerns another central tenet of naturalism that Hume emphasized: there is no room for *a priori* knowledge. Given the way our epistemological mechanism works, '*a priori*' and 'knowledge' simply do not go together. Devitt is claiming both that evidence for knowledge must be experiential (to be in concert with science) and that it is *only* experience that can supply the justification component to knowledge. This means, *a fortiori*, that no *a priori* component can play into our conception of knowledge.[20] It also means that the justification component, since it relies on experience, is always epistemically nonaccidental.

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[18] Quine, "Naturalism: or…", 462-463 and 465-466.

[19] Michael Devitt, "Naturalism and the A Priori," *Philosophical Studies* 92, No. 1 (October 1988), 45.

[20] See Devitt, 46. Interestingly, Devitt allows some fudge room for allowing innate knowledge, which would cause most epistemological naturalists to balk. He gives an interesting evolutionary story for how, if there were such a thing as innate knowledge, its justification would still be experiential.

Devitt's attempt at distinguishing epistemological naturalism from other views reinforces another of Quine's tenets: that the experiential methodology is not just one of many methods that can be employed in doing epistemology; rather, it stands alone. Devitt again: "Using the empirical method from time to time does not make you a naturalist, else everyone would be one. What makes you a naturalist … is a commitment to there being no other method…"[21] This is important for the following reason: there being no other method implies that this one method must apply also to our knowledge of ways of knowing, which results in the first component of epistemological naturalism I identified and that Quine goes to great lengths to defend. It is this component of epistemological naturalism that distinguishes it from bare empiricism. Bare empiricism just is a way of reading the second component: that the experiential method, as exemplified in the sciences, is the only way of knowing. So naturalism adds something to empiricism, about its relation to science, such that the views come apart. It is not a mortal sin to conflate naturalism and empiricism, since naturalism embraces empiricism, but the distinction is worth making nonetheless.

Not all contemporary epistemological naturalists want to go as far as Quine and Devitt, however, both in terms of the scope of naturalism and the robustness in which it is formulated. Peter Godfrey-Smith, for example, is opposed to Quinean naturalism as much as he is opposed to traditional, non-naturalist epistemology. This is largely because of Quine's insistence on the strongest reading for my (i). While Godfrey-Smith agrees that the natural sciences should play a central role in doing epistemology, he does not think that the discipline of epistemology can be reduced to, or absorbed within,

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[21] Ibid., 47.

psychology in the way that Quine envisions:

> ...there is such a thing as a philosophical question, distinct from the kinds of questions asked by scientists. A naturalist can think that science can contribute to the answers to philosophical questions, without thinking that science should replace philosophical questions with scientific questions.[22]

The major difference between this expression and Quine's is that epistemology is not seen as something that can be replaced by science, in part because some features and questions central to epistemology cannot be answered by natural science alone. The most obvious of these has to do with the normative dimension of epistemology.[23] Quine, of course, thinks that normativity should be eradicated in epistemology, but that is by no means required to put one's philosophical approach under the badge of being naturalistic; that is, it is not required to accept my (i) and (ii). I'll return to the issue of normativity in subsequent chapters.

Philip Kitcher (1992) likewise takes Quine's stance to have gone too far, so much so that he dubs Quine's view "radical naturalism."[24] This moniker has to do with the extent to which Quine wants epistemology to be re-envisioned as a species of descriptive psychology. The answer is: all the way! Yet Kitcher takes the renewed enthusiasm for naturalistic epistemology to be a return to the way philosophy had always been done before Frege brought philosophy of language to the forefront.[25] That is, the questions pursued by the epistemological naturalists are the same ones that have dominated

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[22] Peter Godfrey-Smith, *Theory and Reality* (Chicago: University of Chicago Press, 2003), 151.

[23] See ibid., 152 ff.

[24] See Kitcher, "The Naturalist's Return," *The Philosophical Review*, vol. 101, no. 1 (January 1992).

[25] Ibid., 53.

philosophy since at least Descartes. This lends credence to the picture I argued for above: that naturalism has been a long time in the works.

However, Kitcher's "traditional naturalism" differs from Quine's only in degree, not in kind. That is, both take my (i) and (ii) to be central to the naturalist project, but the robustness with which those claims (particularly (i)) are interpreted is where they part company. The commonalities include a shared derision for the use of the *a priori* in doing epistemology and the central role given to the natural sciences in informing epistemological questions, especially with respect to how we come to have knowledge or justification (i.e., with respect to the psychological mechanisms at work).[26] Unlike Quine however (and in line with Godfrey-Smith), Kitcher takes epistemology as conceived by the traditional naturalist to have an essentially normative function.[27] Taking epistemology to have a normative component is not required of naturalism, obviously, but it is not prohibited either.

A final feature of these more contemporary brands of epistemological naturalism is worth emphasizing; namely, the feature of epistemological naturalism that I stressed above and that is reflected in (i) and (ii): that science is of the utmost importance to solving epistemological problems. This is echoed in the set of guiding principles given by Kitcher, among them:

> (1) The central problem of epistemology is to understand the epistemic quality of human cognitive performance, and to specify strategies through whose use human beings can improve their cognitive states.

and

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[26] See especially Kitcher, 58 ff.

[27] Ibid., Section 2.

> (2) The epistemic status of a state is dependent on the processes that generate and sustain it.[28]

Understanding "human cognitive performance" and the processes that bring epistemic states about is not possible without making use of the results of science. Given that (1) and (2) are central to epistemology as a discipline (so says the naturalist, anyway), getting anything accomplished in epistemology actually requires heavy investigation into how the sciences inform those goals. It is just bad epistemology to avoid science in the way that the apsychologistic epistemological approach that has been so prominent since the mid-20th century has.

Clearly epistemological naturalism comes in degrees. At the very least it is worth noting that contemporary champions of the view might emphasize its different components. What I have tried to do above is motivate why I have characterized epistemological naturalism the way I have in terms of the conjunction of (i) and (ii); I think it is fair to say that self-avowed epistemological naturalists would happily accept my characterization with minimal semantic migration. I return to the issue of degrees in the next few chapters.

2.2: Ontological Naturalism

The other main way in which contemporary naturalists express their view is much simpler to state. Namely, naturalism is often formulated as an ontological thesis—that the world as described by the natural sciences is all there is. In other words, the deliverances of the natural sciences serve as a constraint on what can be justifiably admitted into one's ontology. David Armstrong, for example, offers such a

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[28] Ibid., 74-75.

characterization: "Naturalism [is] the doctrine that reality consists of nothing but a single, all-embracing spatio-temporal system."[29] Armstrong takes this claim to be obvious and thus offers no argument for its defense. (In the next chapter I return to the issue of justification for holding an ontological naturalism of this sort.)

It is important for my purposes to note that a high regard for the natural sciences runs deep in this view. It amounts to more than just the uninformative claim that all that exists is natural, for that would not be substantive at all. There is an additional claim about what counts as natural, namely, whatever is describable and explainable by the natural sciences (or, in some cases, an ideal physics). This is sometimes made explicit. For example, consider Frederick Schmitt:

> *Ontological* naturalism is the view … that only *natural* objects, kinds, and properties are real. ... Since ontological naturalism is supported by the success of natural science, and success is success in recognizing what is real, it would do best to define 'natural' as 'what is recognized by natural science.'[30]

Notice that, just as is the case with respect to epistemological naturalism, ontological naturalism takes its lead from the sciences. In Schmitt's case, science is the final and only arbiter on what counts as real. As another example, James Ladyman and Don Ross offer a book-length defense of the claims that (i) science (especially physics) constitutes our "basic source of information about objective reality" and that (ii) whatever is admitted into our ontology must be the result of *bona fide* scientific consensus.[31] The general point to be made here, again, is that according to ontological naturalism science is

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[29] David Armstrong, "Naturalism, Materialism, and First Philosophy," in *Contemporary Materialism*, Paul Moser and J.D. Trout, eds. (New York: Routledge, 1995), 35.

[30] Frederick Schmitt, "Naturalism," in *Companion to Metaphysics*, Jaegwon Kim and Ernest Sosa, eds. (Oxford: Basil Blackwell, 1995), 343.

[31] James Ladyman and Don Ross, *Every Thing Must Go: Metaphysics Naturalized* (New York: Oxford, 2007).

(or ought to be) the final and only authority in deciding what to admit or deny in one's ontology.

So ontological naturalism is the thesis that our ontology is populated with whatever science tells us there is and nothing more. This means, among other things, that our ontological claims will change as often and as much as scientific theories go through revisions and replacement. Despite the difficulty of establishing the content of one's ontology given theory change and revision in the sciences, ontological naturalism is otherwise straightforward and generally expressed consistently by its proponents.

A few other distinguishing features of ontological naturalism are relevant here. The first is that ontological naturalism is often formulated as a thesis distinct from epistemological naturalism. It is not possible to subscribe to ontological naturalism but not the epistemological variety described above. The reverse, however, is not true.[32] For example, Hume advocates for a robust epistemological naturalism but remains agnostic with respect to ontological naturalism. This is hinted at here and there in Hume's corpus, but a passage early in the *Treatise* is instructive:

> Thus the sceptic still continues to reason and believe, even though he asserts that he cannot defend his reason by reason; and by the same rule he must assent to the principle concerning the existence of body, though he cannot claim to maintain its truth by any arguments of philosophy. … We may well ask 'What causes induce us to believe in the existence of body?' but it is pointless to ask 'is there body or not?'... (T 1.4.2.1).

As he makes clear in the *Enquiry*, Hume is concerned with the question of what *causes* us to have the beliefs we do about the external world, and he thus formulates his "science of human nature" to address that question; this is his (proto-) epistemological naturalism. However, any claims made in that enterprise are not relevant to the question of whether

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[32] A detailed defense of these latter claims is given in the next chapter.

there is an external world at all, much less an external world that is as science describes it. Hume thus takes no stance on issues relating to ontological naturalism.[33]

In the same vein, Quine admits that epistemological naturalism and physicalism (a component of ontological naturalism) are related, but that they are not coupled in any logical sense. While he holds physicalism, he asserts that he "could be dissuaded of it on future scientific grounds without being dissuaded of [epistemological] naturalism."[34] Where goes Quine, so goes the bulk of epistemological naturalists. Devitt, for example, endorses ontological naturalism, but emphasizes that it is distinct from epistemological naturalism in a few ways. Ontological naturalism is reductive; epistemological naturalism is not. Most importantly, ontological naturalism has "*nothing* to say about ways of knowing except that they must be, like everything else, physicalistically acceptable."[35] What these examples are supposed to show is that the two versions of naturalism are not tied together such that accepting one means accepting both. The issue of how exactly they relate is an important one, however, and I take that up in the next chapter.

The final distinction of ontological naturalism that I would like to make is that it is not equivalent to physicalism (or materialism). Physicalism is a bare claim about what there is, namely, only physical stuff, but ontological naturalism adds to physicalism something about its relation to science. You can be a physicalist without being an

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[33] Yet Hume does claim that we must take the external world for granted, simply because we could not go through life without doing so. At any rate, I will return to Hume's views on this issue in the next chapter.

[34] Quine, "Naturalism:...", 467.

[35] Devitt, "Naturalism and the A Priori," 46.

ontological naturalist, but the reverse is not true; ontological naturalism includes physicalism as a component. This is exactly analogous to the relation between epistemological naturalism and empiricism that I note above. So, both epistemological naturalism and ontological naturalism are compound views; they each bolster existing philosophical theses with some claim(s) about the role science plays in establishing those views.

The purpose of this chapter has been to get a precise working expression of both epistemological and ontological naturalism, to give some historical context motivating my reasons for formulating the views as I have, and to set the stage for the evaluation of both views that constitutes the remaining chapters of this dissertation. In the next chapter, I turn to the questions of how epistemological and ontological naturalism can be justified and whether there is a dependence relation that binds them.

CHAPTER 3

NATURALISM AND PRIMA FACIE JUSTIFICATION

In the last chapter I tried to avoid the morass of strictly defining naturalism by presenting two somewhat broad ways in which naturalism is expressed as a philosophical thesis. I take it that the contents of ontological and epistemological formulations of naturalism, as I have described them, constitute the most central features of naturalism, broadly construed. Even given this centrality, however, a number of problems arise that require sorting out. One issue has to do with whether or not there is any fudge room in how one can express either version of naturalism. Another sort of problem is figuring out how these expressions of naturalism relate to other explicitly expressed 'naturalistic' viewpoints that are clearly distinct from them. Finally, another set of problems is markedly epistemological. The most significant of these concerns what justificatory grounding can be offered for holding epistemological or ontological naturalism. Similar is the question of how these two forms of naturalism relate to one another: is there a dependence relation between them such that accepting one view requires accepting the other? Does this dependence relation go both ways? I try to sort out these considerations in the present chapter. We proceed by cases.

3.1: Strong and Weak Varieties of Naturalism

The versions of naturalism I laid out in the last chapter are purposefully broad, yet precise where needed. Recall the two components of epistemological naturalism I delineated:

> (i) what the procedures and methods of the sciences have taught us about the world and ourselves will produce an epistemology with empirical content—a systematic factual description of how we come to know things,

and

> (ii) that an experiential or empirical method, as exemplified in the sciences, is the only, *or at least the best*, way of knowing.

(i) is a claim about epistemology as a discipline, while (ii) concerns the proper avenue(s) for achieving the aims of epistemology (e.g., knowledge or justification). It is the difference between how epistemology is done (or what epistemology is) and how one gets what one wants from epistemology. With both components present, epistemological naturalism is a rich stance that covers the totality of epistemology. Moreover, (i) is necessary in order for epistemological naturalism to be a distinct philosophical thesis *at all*, since (ii) just amounts to bare empiricism. Or so I argued.

This two-component formulation of epistemological naturalism has the virtue of making the view nonrigid. For example, (i) can be defended or explained along Quinean lines, where epistemology as a discipline is really just a subdiscipline of empirical psychology, but it can also be explained via any number of other views about how the mind works that might come out of cognitive science, etc. Thus, one can endorse epistemological naturalism without committing to a *particular* view about how the processes of the mind produce knowledge, belief, and the like. (There is an added virtue here that seems to allow for theory change in cognitive science; I shall return to this point

in the next chapter.)

Likewise, the "*or at least the best*" clause in (ii) allows for degrees of commitment. One might take the robust view of Devitt and claim that the experiential methods of the natural sciences are the only methods that can be employed in doing epistemology, but there are ways of adding nuance to (ii) that avoid such rigidity. Devitt balks at such attempts, but others have suggested some motivation for not taking the rigid stance. The examples of Godfrey-Smith and Kitcher in the last chapter are instructive here.

Another classical example of such motivation is offered by Hilary Kornblith (1985, 2002). Kornblith tries to distinguish naturalized epistemology from the traditional epistemological tradition via what he calls the *replacement thesis*. By his lights, epistemology as a discipline can be boiled down to a quest for answers to these three questions:

1. How ought we to arrive at our beliefs?

2. How do we arrive at our beliefs?

3. Are the processes by which we do arrive at our beliefs the ones by which we ought to arrive at our beliefs?

Kornblith claims that the traditional view in epistemology takes Question 1 to be distinctly philosophical and Question 2 to be distinctly psychological. The philosophers can do their work, the psychologists can do theirs, and an interaction can hopefully move them on their way toward answering Question 3.[1] The naturalistic approach, by contrast, *to some extent or other*, replaces the philosophical epistemological questions with

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[1] Hilary Kornblith, "What is Naturalistic Epistemology?" in *Naturalizing Epistemology*, Hilary Kornblith, ed. (Cambridge, MA: MIT Press, 1985), 1-2.

psychological ones.[2] This is a way of avoiding the necessarily rigid formulation of epistemological naturalism. There are multiple options available.

The Quinean opts for total replacement, where Question 2 absorbs Question 1 completely. That is, in the way Quine expresses his view, epistemology as a philosophical exercise just becomes an exercise in empirical psychology. All this does is give epistemology a "new setting and clarified status" as a form of natural science that concerns itself with a natural phenomenon (human cognition).[3] Yet subscribing to epistemological naturalism need not equal subscribing to total replacement. One might opt for something of a middle ground between how the traditional view and the total replacement view approach to Kornblith's three questions. One might opt for some kind of partial replacement, where epistemology retains some degree of autonomy from psychology while still taking the contributions from psychology seriously. That is, philosophy retains some autonomy even if psychologists can answer the same questions, abeit through some alternative approach. In this case, the act of replacement *could go either way*, even if preference is given to some future replacement of philosophers by psychologists.[4] For example, one could hold that epistemology necessarily has a normative dimension (a la Question 1) that falls outside the scope of any natural science. Kornblith presents some specific cases of partial replacement views, but detailing them

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[2] Ibid., 3.

[3] W. V. Quine, *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), p

[4] See Kornblith, 6-7, and see my footnote 9 below.

here is not relevant to my present task.[5]

Perhaps a clearer picture of why an epistemological naturalist need not endorse the rigid interpretation of (ii) is offered by Stephen Stich. Stich is an epistemological naturalist who divides naturalism into strong and weak varieties. What they have in common is the claim that the methods of the natural sciences can aid in answering important epistemological questions (in concert with my (ii) above). What he calls Strong Naturalism is, again, the view that I have attributed to Quine: the view that all epistemological questions just are scientific questions.[6] Whatever virtues Quine's view might have, Stich takes it to be a nonstarter; he thus endorses a view that he dubs Weak Naturalism. This version of naturalism holds simply that some, but not all, epistemological questions can be answered or informed by doing science.

In particular, epistemic theories concerned with finding the right strategy for belief formation and revision often have a distinctly normative component: they focus on some set of cognitive virtues as guides (truth, true belief, justification, warrant, etc.).[7] It is this normative component that causes problems for the rigid ("Strong") formulation of epistemological naturalism. Consider Stich:

> Science, broadly construed, can tell us which reasoners do a good job at producing true beliefs, and what strategies of reasoning they exploit. But science can't either confirm or disconfirm the initial normative step. Science can't tell us what standard strategies of reasoning should be evaluated.[8]

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[5] E.g., see the essays by Campbell, Goldman, and Stich in Kornblith's *Naturalizing Epistemology*.

[6] Stephen Stich, "Naturalizing Epistemology: Quine, Simon, and the Prospects for Pragmatism," in *Philosophy and Cognitive Science*, C. Hookway and D. Peterson, eds. (Cambridge: Cambridge University Press, 1993), 2.

[7] Ibid., 7.

[8] Ibid., 8.

Stich takes this inherent feature of science (being free of value-laden suppositions) to be the nail in the coffin of the Strong view. However, it does not follow that epistemological naturalism is dead, too. It just means that a weaker formulation of the view is the best we can hope for. So, like Kornblith, and contra Devitt and Quine, Stich thinks that there is legitimate room for maneuvering in how one formulates epistemic naturalism, as long as certain conditions are met which can distinguish it from other, traditional epistemological viewpoints. I take my (i) and (ii) to be such conditions. In Chapter 4, I discuss in much more detail the prospects for both strong and weak formulations of naturalism. For now, I wish to show only that there are ways of formulating such views while remaining true to the naturalism program. Even so, I do think that there are potential problems with both Stich's and Kornblith's views, but these problems are only peripherally relevant to my present goals. In Stich's case, there seems to be an underlying claim that science must be value free *per se*, but this is far from obvious. Even if one thinks of the ideal science as lacking any value-laden assumptions or presuppositions, it is hard to see how epistemic norms can be included in the set of values we wish to leave out of science. Some have argued that epistemic norms are intrinsic to any discipline concerned with figuring out what the world is like. In Kornblith's case, I take his *weak replacement* thesis to have some problems, namely that it does not (and cannot) discriminate between which way the replacement is supposed to go. If psychology and philosophy are just different methodologies for "arriving at the same place" it leaves the possibility open for distinctly philosophical epistemology to replace psychology, which would make null the first central component of epistemological naturalism (i).

The central thesis of ontological naturalism—that the world as described by the natural sciences is all there is—is, like that of epistemological naturalism, appropriately broad yet precise. It is precise in the sense that it constrains one's ontology by science, and science alone; no ontological claim can fall outside of whatever is describable and explainable by the natural sciences. The thesis is broad in an interesting way as well: it says nothing about what the deliverances of the natural sciences in fact are. This allows for both particular disagreements among scientists and for theory revision and replacement. To see this note how ontological naturalism and scientific realism are often paired. It might even be argued that ontological naturalism requires scientific realism. The reason is that making ontological pronouncements about the world *that are based on what science tells us* requires taking the deliverances of the sciences seriously (more on this below). It is worth noting too that scientific realism is really a family of views. The scientific realist might take their view to be that science tells us that something external exists, or that what is observable exists, or that both observables and unobservables exist as posited by our best science.[9] Taking the lead of the realists, the ontological naturalist thus has some leeway in filling out their ontology. Like epistemological naturalism, then, ontological naturalism comes in degrees.

3.2: Alternative Conceptions of Naturalism

The last section shows the hows and whys of the two varieties of naturalism that I take to be central to the naturalist program more generally. Yet one might think that naturalism is much more pervasive than that. It is common to see a host of views, clearly

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[9] There are other varieties. See the first chapter of Devitt's *Realism and Truth* for a nice overview of various forms of realism.

distinct from two views I have discussed, put forth as versions of naturalism. For example, one can find discussions of moral naturalism[10] (or naturalistic accounts of morality), semantic naturalism[11], and naturalized theory of mind[12] (and the list goes on and on). Given the deluge of such expressions of naturalism, should I not also consider them as being on par with, or to be examined alongside, the ontological and epistemological versions I have been focusing on? I do not think so. Instead, I suggest that what these views have in common is that they are each a product of either ontological or epistemological naturalism; that is, they depend on ontological or epistemological naturalism in basic ways.

For example, semantic naturalism tells us that the only genuine concepts we have come from the natural sciences; any apparently nonscientific concepts must either find an interpretation in terms of those scientific concepts or be abandoned.[13] What grounds this view is the kind of thoroughgoing epistemological naturalism we see expressed by Quine and Devitt. Recall that Devitt takes the empirical "way of knowing" that is exhibited in the sciences to be the *only* way of knowing. This means that, *ipso facto*, all concepts are

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[10] See, e.g., Simon Blackburn, *Ruling Passions: A Theory of Practical Reasoning* (Oxford: Clarendon Press, 1998), esp. 47-48. For a critical view, see Erin Kelly, "Against Naturalism in Ethics," in *Naturalism in Question*, Mario De Caro and David MacArthur, eds. (Cambridge, MA: Harvard University Press, 2004), 259-274.

[11] See, e.g., Barry Loewer, "A Guide to Naturalizing Semantics," in *A Companion to the Philosophy of Language*, Bob Hale and Crispin Wright, eds. (Oxford: Blackwell, 1997), 108-126.

[12] See, e.g., John McDowell, "Naturalism in the philosophy of Mind," in *Naturalism in Question*, Mario De Caro and David MacArthur, eds. (Cambridge, MA: Harvard University Press, 2004), 93-94. See also, e.g., any causal theory of mental content from the three or so decades. A classic example is Dennis Stampe, "Toward a Causal Theory of Linguistic Representation," in *Midwest Studies in Philosophy, vol. 2*, P. French, H. K. Wettstein, and T. E. Uehling, eds., (Minneapolis: University of Minnesota Press, 1977), 42-63.

[13] For more on this view, see Mario De Caro and David MacArthur's *Naturalism in Question* (Cambridge, MA: Harvard University Press, 2004), 7ff.

products of the sciences or are translatable into the language of the sciences. Likewise, naturalized views of the mind are "naturalized" precisely because they restrict themselves to the categories available to the ontological naturalist. McDowell (2004), for example, posits a theory of thinking and knowing that makes them out to be natural phenomena occurring in living creatures. This much seems obvious; thinkers are living creatures. The point, however, is that we need not posit a *sui generis* "space of reasons" in addition to the structural space of the natural sciences in order to explain thinking and knowing.[14] Thus, "the fact that we are knowers and thinkers does not reveal us as strangely bifurcated, with a foothold in the animal kingdom … and a mysterious separate involvement in an extranatural realm of rational connections."[15] All we need is the ontological vocabulary provided us from the sciences.

These few examples are intended to show that peripheral expressions of naturalism depend, in one way or another, on either epistemological or ontological naturalism, which is why I take those two views to be basic or foundational to naturalism in general. This dependence is in no way an indictment against those peripheral expressions of naturalism. It is closer to the opposite—it is one way to ground or justify holding such views.[16] That is, if either foundational version of naturalism is the view to hold, a series of peripheral views follow easily.

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[14] See McDowell, 93-95.

[15] Ibid., 95.

[16] Another way might be the clear explanatory advantage of those views as compared to their competitors.

3.3: A Justificatory Grounding for Epistemological Naturalism

An obvious question now looms: on what do epistemological and ontological naturalism depend? Is either of them in some way self-justifying, or are we to take them as "basic" in the sense of them needing no justification? After all, we cannot have an infinite justificatory chain; something has to be taken as basic. The questions I take up in this section are whether either version of naturalism fits the bill and how the justifications for each view relate. I begin with epistemological naturalism.

I suggest that subscribing to epistemological naturalism is *prima facie* justified in a basic way. (By "*prima facie*" I just mean that there are a number of candidates or plausible options that look to justify epistemic naturalism.) This is true even if epistemological naturalism (as a philosophical thesis) turns out to be false. In terms of available options, there are reams of epistemological frameworks for claiming when and how beliefs are justified. Many of these options can be construed in a way that takes seriously (ii)—the second component of epistemological naturalism. As such, I take it that the *prima facie* justification for holding epistemological naturalism has the advantage of coming in many forms, depending on one's epistemological commitments beyond (i) and (ii).

As a final but related preliminary point, it is important to remember that the analysis of epistemic phenomena (knowledge, belief) is, for the naturalist, an empirical investigation. Commitment to (i) and (ii) requires this much. Kornblith (2002) is instructive here:

> [Naturalistic terminology] earns its keep in just the way that chemical or biological or physical terminology earns its keep: it must be part of a successful empirical theory. That fact that terms such as 'knowledge' are not part of physics or chemistry does not show that they are not naturalistically acceptable. Rather,

> the question for naturalists is whether knowledge turns out to be a theoretically unified phenomenon, and this gives every appearance of being a legitimate and tractable empirical question.[17]

Even given this empirical constraint, it is also important to see that the conjunction of (i) and (ii) are pretheoretical in the sense that they can be happily endorsed prior to (or at least independent of) the endorsement of any particular brand of epistemological theory about, say, what knowledge is or when beliefs are justified. So, just because the naturalist requires analyzing epistemic phenomena via empirical investigation alone does not mean that the naturalist must produce a new theory about, say, belief formation and revision. A host of existing, "traditional" epistemic strategies regarding those things can be commandeered and given a naturalistic interpretation. With respect to the justification for holding epistemic naturalism itself, I shall offer three ways that such a commandeering and retweaking might go.

The "traditional" view of reliabilism is a good place to start. Baldly stated: on a reliabilist framework, the belief that epistemological naturalism is true is justified just because it is produced by a cognitive process that is (generally) reliable. The natural sciences enjoy tremendous success in producing true beliefs about the world we inhabit. Obviously, the sciences do not produce *only* true beliefs, as many of the claims of various scientific theories have been replaced by others. Yet the strong propensity of the sciences to produce true over false beliefs is all that reliabilism requires.[18] If we construe

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[17] Hilary Kornblith, *Knowledge and Its Place in Nature* (New York: Oxford, 2002), 24.

[18] I speak throughout this section of science's ability to produce true beliefs or discover truths about the world. This is acceptable language for the naturalist that is drawn to scientific realism, but not to those naturalists who are scientific antirealists. However, replacing "truth" with "empirical adequacy" makes my claims here amenable to the antirealist but does not otherwise affect the force of the argument.

epistemological naturalism in *any of the ways* discussed in Chapter 2—as an appropriation of the methods of the sciences in achieving the aims of epistemology—then it seems we have straightforward justification for holding epistemological naturalism. It makes no difference here if naturalism is construed in a "strong" or "radical" way as Quine and Devitt prefer or in a "moderate" or "weak" way as others prefer.[19] Since beliefs in the truth of the deliverances of science are justified on account of their reliability, and since epistemological naturalism is just an extension of the methods of the sciences that covers all epistemology, the belief that epistemological naturalism is true is justified in the same way that a product of science is—by empirical investigation. Let me explain.

When Alvin Goldman originally produced his reliabilist theory as a framework for justified belief, the highest priority was to formulate the view in nonepistemic language ("truth," by his lights, is not an epistemic term).[20] The point was to avoid having epistemic commitments in place before the theory is generated. Presumably the naturalist, of Goldman's stripe or another, would desire this. After arguing that a principle of justified belief must be causal,[21] Goldman introduces the idea of a *process*, which for him is a technical term that is central to understanding reliabilism. A process is "a functional operation or procedure, i.e., something that generates a mapping from

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[19] By "others," I just mean those cited: Godfrey-Smith, Kitcher, Stich, Kornblith, etc.

[20] See Goldman, "What is Justified Belief?" in *Naturalizing Epistemology*, Hilary Kornblith, ed. (Cambridge, MA: MIT Press, 1985), 91-92.

[21] Ibid., 99.

certain states—'inputs'—into other states—'outputs.'"[22] Outputs are states of belief. Importantly, these causal processes can be subjected to empirical investigation, which the naturalist requires. By observing various processes at work under various conditions we can come to rule out the faulty ones (which tend to produce more false beliefs than true[23]) and hone in on the processes that are reliable.

Goldman never quantifies just how reliable a process needs to be in order for us to endorse it and employ it in our own reasoning, but the naturalist has a ready-made answer to this.[24] That is, the naturalist has already identified the scientific reasoners as the ones most successful at forming true beliefs about the world; we need only look to the sciences to discover what strategies (or "processes") of reasoning they make use of. Since, as I claimed above, beliefs in the truth of the deliverances of the sciences are justified on account of their reliability, and since naturalism just extends the methods of science to epistemology, justification for holding epistemological naturalism is as straightforward as the justification for holding the claims of bona fide science.

Stich offers a chess analogy regarding reliabilism that fits nicely with this naturalist picture:

> We identify good chess players by looking at the consequences of their strategies—the good players are the ones who win, and the good strategies are the ones that good players use. So we might try to identify good reasoners by looking at the outcome of their reasoning.[25]

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[22] *Ibid*., 101.

[23] Goldman includes among these: wishful thinking, hunches, hasty generalization, and the like. See 99-100.

[24] Presumably Goldman thinks reliability ranges between "produces more true beliefs than false" and "always produces true beliefs." Given enough data, we can pick and choose the most reliable process relevant to our cognitive task.

[25] Stich, "Naturalizing Epistemology…," 5.

The upshot for the naturalist is that the strategies of science are the "winning" strategies in terms of reliably tracking truth, and so are the strategies that should be endorsed if tracking truth is the goal. Reliabilism might have been proffered from the philosophical armchair (and thus nonempirically), but it can be formulated in a way consistent with the epistemological naturalist's commitment to (i) and (ii).

I take it that an evidentialist framework for justification can likewise be adopted and adapted to fit nicely with epistemological naturalism. Take the standard evidentialist thesis for justification:

> Person S is justified in believing p at time t iff S's evidence for p at t supports believing p.

The critical bit for the naturalist, as for anyone else interested in evidentialism, is what follows the biconditional. The thesis is vague enough that it allows evidentialists to disagree on exactly what counts as evidence. Thus, the naturalist need only amend the consequent so that "evidence" is constrained by what is empirically available (or even stronger: by what is empirically verifiable, falsifiable, etc. These are just details).

Stated provisionally, the belief that epistemological naturalism is true is justified simply because one's evidence might support so believing. The methods of the sciences tend to produce true beliefs, perhaps more than any other form of inquiry, and so the methods of the sciences, by virtue of their success, tend to probabilify those beliefs they produce.[26] Since epistemological naturalism includes the claim that the methods of the natural sciences are the most successful at getting us to true beliefs (as in (ii)), the actual

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[26] See, for example, Philip Kitcher's now classic *The Advancement of Science: Science without Legend, Objectivity without Illusions* (New York: Oxford, 1993), especially Chapter 5. Kitcher argues that science has produced a robust, objective, and reliable form of progress.

success of the natural sciences in producing true beliefs is all the evidence we need to justify believing that epistemological naturalism is true.

Perhaps the most straightforward framework for justifying epistemological naturalism comes from coherentism. Whatever the theoretical difficulties with coherentism may be, the operation and development of science is Exhibit A for successful and systemic coherence. Through the methodological process of constructing hypotheses based on background beliefs or already established theories, gathering observational data and testing the hypotheses, etc., coherence is paramount. If explanatory theories (or predictions) and experimental observations do not cohere, revision is required somewhere in the system. The central pillars of coherentism are paradigmatically demonstrated in the methodology of science. The first is that it is the coherence of the system that makes it successful; the explanatory coherence of scientific theories is what confers epistemic justification. The second is that no beliefs outside of the system are needed to support anything within the system. The third is that each belief in the system is more than just a support for other beliefs (that is, each belief is supported by the others; there are no extraneous or "basic" beliefs that are otherwise unconnected from the rest).[27] Coherence is required both internally within a given theory and between relevantly similar theories. This high standard of coherence in the sciences provides unequivocal support for (ii) and, at least in principle, a reason to accept (i). So, if one favors coherentism as the correct view of epistemic justification, they will have straightforward *prima facie* justificatory support for epistemological naturalism, since the latter is best thought of as a product of reflection on scientific reasoning.

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[27] See Earl Conee's "The Basic Nature of Epistemic Justification," in *Evidentialism: Essays in Epistemology*, Earl Conee and Richard Feldman (New York: Oxford, 2004), 37-38.

3.4: A Justificatory Grounding for Ontological Naturalism

The ontological naturalist in some ways has an easier time with justification than the epistemological naturalist does, since, as I will argue, part of the work has already been done on their behalf. I have just canvassed a few ways in which subscribing to epistemological naturalism can be *directly* (*prima facie*) justified via a few different epistemological frameworks currently in vogue. Each of those justifications requires a defense of a particular brand of epistemic theory (reliabilism, evidentialism, coherentism, and so on). The reason is that the epistemological questions are primary to justification. Nonetheless, analogous avenues are not open to the ontological naturalist, since it does not follow straightforwardly from any of those theories. Recall (from Chapter 2) that Armstrong takes ontological naturalism as an assumption—a starting place—from which to begin sketching his metaphysical system. The only justification offered for assuming ontological naturalism is that it is a position that "many would accept." This is hardly a convincing reason to accept the view, especially since it is a view that most (outside of philosophy, at any rate) would deny. It might be a fruitful exercise to construct a systematic metaphysics that is built up from the assumption of ontological naturalism, but something needs to ground that assumption. I suggest that the only legitimate such grounding for ontological naturalism is epistemological naturalism. In other words, I take it that, once the belief that epistemological naturalism is true is taken to be justified (via one of the avenues discussed in the last section or some other), the belief that ontological naturalism is true is *prima facie* justified (even if the view turns out to be false). The reason is that since epistemological naturalism takes the methods of the natural sciences to be the best (or only) way for us to make reliable truth claims about the

world, it is natural to restrict one's ontology to what the sciences tell us about the world; since current science is what constrains ontological naturalism, the latter can go no further.

This can be explained another way. It might be objected that we should seek a *prima facie* justification for ontological naturalism in a manner that does not depend on epistemological naturalism. I do not think this is possible. In the case of epistemological naturalism, I gave a justification based on various theories about how we come to know, the best avenues for attaining knowledge, and how our beliefs are justified. That is, I grounded epistemological naturalism on basic epistemological theories—theories that have nothing to do with ontological naturalism *per se*. So why can we not attempt to justify ontological naturalism by appealing to the same? The reason, in short, is Cartesian. Justification is an epistemological principle. We have to have settled views on a certain set of epistemological questions before attempting to answer any ontological ones.[28] Specifically, we have to have views on *how* we come to form beliefs, how we have access to the external world, and what justifies beliefs about the external world before we can stake a claim as to what the external world consists in. It is epistemological naturalism that provides those former views via the results of science. Thus, epistemological naturalism is primary in the justificatory chain.

Without going too far afield, there is yet another way to think about this is in terms of complementary views. Contemporary philosophers of science are drawn to naturalism, empiricism, and scientific realism. Of course, not all philosophers of science endorse all of those views, and some even take there to be an incompatibility between

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[28] I say this view is Cartesian because this is the same approach taken by Descartes in his *Meditations*.

some of them. I stake no claim on that here.[29] What is relevant is that all of those views are grounded on epistemic principles. The most obvious case of the three is empiricism, which *just is* a view about how knowledge is acquired (namely, by sense-experience).[30] Consider now the relation between ontological naturalism and scientific realism. I suggested earlier that the former seems to require the latter. After all, you cannot be justified in claiming what the spatiotemporal world consists in without taking seriously the results of the fields that study the spatiotemporal world. (There are obviously different versions of scientific realism (mostly having to do with the status of unobservables), but ontological naturalism need not discriminate between them.) That being said, arguments in favor of scientific realism are often straightforwardly epistemological. Devitt, as an example, gives an argument for the justification of common-sense realism (and the subspecies scientific realism) that is based on his naturalized epistemology.[31] This is directly analogous to how I am claiming justification for ontological naturalism is provided by epistemological naturalism. His point is that what we can know, or justifiably believe, about objects—that is, the basis for both ontological naturalism and scientific realism—is an epistemic question: "The extent to which and the manner in which we can come to know about an object are, for the realist,

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[29] For a nice discussion on the apparent incompatibility, see Chapter 15 of Godfrey-Smith's *Theory and Reality.*

[30] I realize that there are different ways of expressing empiricism and adding nuance to the traditional expression given here, but those are not relevant at present.

[31] See Devitt, *Realism and Truth,* 61ff. Interestingly, in relation to my claims above, Devitt also uses Cartesian skeptical arguments in favor of the so called "underdetermination of the evidence" problem, which he takes to be supported by modern science.

epistemic issues which are quite distinct from ontological questions about the object."[32] My overall point here is that ontological naturalism, just like other views in the same family, requires an epistemic basis of justification. A thoroughgoing epistemological naturalism is that basis. In other words, the justification for ontological naturalism can be thought of as being parasitic on a justified epistemological naturalism.

3.5: The Dependence Relation Between Epistemic and Ontological Naturalism

There is a dependence relation between epistemological and ontological naturalisms, but that relation is not a two-way street. From what I sketched above, committing oneself to ontological naturalism demands committing oneself to epistemological naturalism. By "demands" I just mean that a *justified* commitment to ontological naturalism demands that one also subscribe to epistemological naturalism. However, the reverse is not true; it is consistent for one to be an epistemological naturalist but not an ontological naturalist. For example, one might hold to a moderate ("weak") epistemological naturalism that says the methods of the natural sciences are the best methods we have for obtaining knowledge, while still holding beliefs about entities that fall outside the purview of science and thus ontological naturalism. On this view, epistemological naturalism would prove to be a thesis about how best to acquire knowledge or justification within a certain domain, but not all domains.

As an interesting historical case of agreement, Hume, whom I characterized in Chapter 2 as the progenitor of contemporary epistemological naturalism (by endorsing

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[32] Ibid., 15.

something like (i) and (ii)), takes an agnostic stance on whether ontological naturalism follows from that view. A passage from the Treatise bears repeating:

> Thus the sceptic still continues to reason and believe, even though he asserts that he cannot defend his reason by reason; and by the same rule he must assent to the principle concerning the existence of body, though he cannot claim to maintain its truth by any arguments of philosophy. … We may well ask 'What causes induce us to believe in the existence of body?' but it is pointless to ask 'is there body or not?'... (T 1.4.2.1).

The last sentence is particularly telling of Hume's view. Between the questions of what there is and what causes our beliefs about the world (or which methods seem most consistent and systematic in answering that), there is a gap that cannot be jumped. Hume clearly endorses (i) and (ii); he is also proposing an answer to Kornblith's Question 3: while he thinks that a proper understanding of the means by which we arrive at our believes will amount to the way we ought to arrive at our beliefs, he remains skeptical about what our beliefs actually tell us about the world. With respect to matters of fact (which is the domain of ontological naturalism), experience is not omniscient according to Hume:

> It is a question of fact, whether the perceptions of the senses be produced by external objects, resembling them: How shall this question be determined? By experience surely; as all other questions of a like nature. But here experience is, and must be entirely silent. The mind has never any thing present to it but the perceptions, and cannot possibly reach any experience of their connexion with objects. The supposition of such a connexion is, therefore, without any foundation in reasoning (EHU 12.12).

The gist, from Hume's perspective, is that we can use the sciences to get an accurate view of *how* we come to know things and of when we are justified in laying claim to knowledge; but it does not follow that we can actually say anything *certain* about the causes of our perceptions (i.e., whether those causes are physical entities or not). So, as far as Hume can tell, Berkeley's idealism could still be right. Hume even adds in a

footnote to EHU 12.15 that Berkeley's skeptical arguments are irrefutable ("...they admit of no answer and produce no conviction"). In other words, there is no way for us to know whether or not they are correct. Of course, as the first passage just quoted indicates, Hume thinks that we *do* continue to assume that the external world is as it appears, if only as a means of navigating the world successfully.

I am not claiming that contemporary naturalists should (or do) follow Hume's lead here. I do think, however, that the passages in Hume are instructive in showing that while ontological naturalism does not follow necessarily from the naturalistic epistemic stance, it does depend on it.[33] That being said, in this chapter I have offered a number of avenues from which epistemological naturalism can attain *prima facie* justification and serve as a direct avenue for justifying ontological naturalism. In the next chapter, I turn back to the *prima facie* clause in examining epistemological naturalism. Perhaps defeaters are available for a robust epistemological naturalism; perhaps not.

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[33] Note also that Arthur James Balfour and Lloyd Morgan, the two other "proto-naturalists" quoted in Chapter 2, are in agreement with Hume.

CHAPTER 4

THE TENABILITY OF ROBUST EPISTEMOLOGICAL NATURALISM

In the last chapter I argued that subscribing to epistemological naturalism is *prima facie* justified, even if epistemological naturalism as a philosophical thesis turns out to be false. (The *prima facie* clause is just a way of indicating that there are no defeaters to the view that are obvious at first glance.) Moreover, I argued that an endorsement of epistemological naturalism enjoys this support in a number of different epistemological frameworks. I followed this by suggesting that the justification or grounding for holding ontological naturalism comes from this *prima facie* justified epistemological naturalism. Given the latter, grounding epistemological naturalism in the face of potential defeaters looks to be the *sine qua non* of the naturalism project. If there turn out to be fatal defeaters for accepting epistemological naturalism, then the naturalism project as a whole will topple.

I shall next raise some concerns over whether the case for the legitimacy of epistemological naturalism, as a substantive thesis, is as worry-free as its proponents would like it to be. There are a series of possible defeaters for epistemological naturalism that are more or less independent from one another; we will look at them in turn. It is important here to remember two things argued for in the last two chapters. The first is that there are two components to my formulation of epistemological naturalism:

> (i) what the procedures and methods of the sciences have taught us about the world and ourselves will produce an epistemology with empirical content—a systematic factual description of how we come to know things,

and

> (ii) that an experiential or empirical method, as exemplified in the sciences, is the only, *or at least the best*, way of knowing.

The second is that these two components allow for degrees of commitment (i.e., one need not accept a Quinean story about what the sciences have taught us about the function of the mind in order to accept (i), and one need not buy into the claim that the experiential or empirical method is the only way of knowing in order to accept (ii)). As will become apparent, some of the defeaters discussed below will be more damning to stronger expressions of epistemological naturalism than to weaker ones, and thus my claim about degrees of commitment will become pivotal.

4.1: Normative Essentialism in Epistemology

Perhaps the most discussed objection to epistemological naturalism has to do with the supposed normative nature of epistemology.[1] Most theorizing about notions central to epistemology as a discipline, particularly knowledge and justification, is concerned with what and when one *ought* to believe. Given that the empirical methods of the sciences

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[1] For a recent anthologized volume, see De Caro and Macarthur, *Naturalism and Normativity* (New York: Columbia, 2010); see also James Maffie, "Naturalism and the Normativity of Epistemology," *Philosophical Studies*, vol. 59, no. 3 (1990), 333-349; M. Janvid, "Epistemological Naturalism and the Normativity Objection," *Erkenntnis*, vol. 60, no. 1 (January 2004), 35-49; Harold I. Brown, "Normative Epistemology and Naturalized Epistemology," *Inquiry,* vol. 31 (1988), 53-78; Guy Axtell, "Naturalism, Normativity, and Explanation: The Scientistic Biases of Contemporary Naturalism," *Metaphilosophy*, vol. 24, no. 3 (July 1993), 253-274; Jaegwon Kim, "What is 'Naturalized Epistemology?'" *Philosophical Perspectives*, vol. 2, Epistemology (1988), 381-405.; Philip Kitcher, "The Naturalists Return," *Philosophical Review*, vol. 101, no. 1 (Jan. 1992), 53-114. The classic defense of the normativity of epistemology, against Quine, is Hillary Putnam's, "Why Reason Can't Be Naturalized," *Synthese* 52 (1982), 3-23.

are supposed to be value-free, we cannot get an epistemological theory, complete with all the necessary "oughts," by turning to science alone. Science might be able to tell us how we come to know things or form beliefs (as in (i)), but it cannot tell us how we ought to approach knowledge or form beliefs (a la (ii)) since the scope of science only goes as far as telling us how the world is. The idea is that employing an empirical methodology to construct what van Fraassen calls a "factual theory writing project about cognitive functioning," as Quine suggests we should, cannot account for the normative nature of epistemology with respect to standards of justification, etc.[2]

This alleged problem for epistemological naturalism is not new. Even Hume, who I presented as the champion of proto-naturalism, seems to argue for something like this in dealing with the so-called "is-ought problem." In the *Treatise*, Hume argues that no claims about matters of fact (i.e., none of the claims given by science) can entail any normative or evaluative claim (T 3.1.1.27). Of course, what exactly Hume is claiming in this passage is famously controversial.[3] I take it that the majority view is as stated here: that "ought" statements do not *seem to be* derivable from "is" statements, and "is" statements are all we can get from science.[4] In any case, deciphering Hume's view is irrelevant to my point here, which is that the notion of normativity being problematic for

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[2] See Bas C. van Fraassen, *The Empirical Stance* (New Haven: Yale University Press, 2002), 75-78.

[3] For a thorough review of the controversy surrounding this passage, see Nicholas Sturgeon, "Moral Skepticism and Moral Naturalism in Hume's *Treatise*," *Hume Studies*, vol. 27, no. 1 (April 2001), 3-83. See also Charles R. Pidgen, *Hume on Is and Ought* (New York: Palgrave Macmillan, 2010) for more recent, anthologized essays.

[4] The classic defense of this reading is A. C. MacIntyre, "Hume on 'Is' and 'Ought,'" Philosophical Review, vol. 68, no. 4 (October 1959), 451-468.

the naturalist is not new.[5]

I will only treat one aspect of the normativity objection below, namely, the fact that some epistemological naturalists take it to have some force. Apart from that, the normativity objection is not worth discussing here. I say this primarily because the normativity objection has been through the wringer already.[6] I do not mean to say that the issue has been settled in favor of the naturalist or non-naturalist epistemologist; quite the contrary. The ongoing discussion surrounding the normativity objection has not resulted in much consensus, in my view, because of the problems associated with the how the objection is formulated. To put it bluntly, the normativity objection is too broad to be effective in the sense that there are so many places to get off the boat; the objection can be avoided by questioning whether there are such things as moral facts, whether the methods of the sciences are actually value-free, or whether the norms that govern science (if there are such things) can be defended empirically. Thus, dealing properly with the issue of normativity in epistemology necessitates consideration of a massive literature in classical epistemology, metaethics, and the like. Given that none of the claims that make up the objection is noncontroversial, I think *as a defeater for epistemological naturalism it is weak* in the sense of lacking the precision needed to be persuasive. Another way of putting this: philosophers often build their set of views in stages. We settle on a view on some narrow issue and build out to other areas of relevance or interest while attempting to maintain consistency across views. The problem is that the force of the normativity objection requires one to have settled views on a vast number of independent

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[5] See also T 3.1.1.6 and T 3.1.1.9.

[6] See footnote 1 of this chapter.

philosophical issues. Without this, it becomes too easy to remain agnostic with regard to any of the relevant claims that are integral to giving the objection its force.

Despite this flaw, the normativity objection is important to mention for a few reasons. One is to note how issues of normativity infect the naturalist program throughout. The ontological naturalist, for example, must deal with locating or dealing with normative phenomena as part of the explananda in a scientific picture of the world.[7] My view is that the problem of normativity is more pressing for the ontological naturalist than for the epistemological naturalist. I argued earlier that the justification for belief in ontological naturalism is dependent on a justified epistemological naturalism. Here, I think the dependence relation is reversed. The ontological naturalist need not affirm that there are moral facts in the world, although some no doubt would affirm this. Yet if a thoroughly scientific explanation can be given for the existence of moral facts in the world, then the epistemological naturalist may commandeer such an explanation in responding to the normativity objection. Another reason for mentioning the normativity objection is that its continued persistence at least speaks to the force the objection has for some, including some committed naturalists. A few examples are worth reviewing.

In the last chapter, I hinted at some ways in which the issue of normativity might affect one's commitment to epistemological naturalism. Recall Kornblith's notion of a replacement thesis: the extent to which the question of how we ought to arrive at our beliefs is replaced by the question of how we do arrive at our beliefs. For Quine, the latter completely absorbs the former such that any epistemological question becomes a

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[7] For more on the issue of normative phenomena in a scientific ontology, see Mario De Caro and David Macarthur's *Naturalism and Normativity* (NY: Columbia University Press, 2010).

psychological one; epistemological questions have no autonomy from science. Quine's view radically alters the methodology of epistemology. More importantly here, Quine thought that his view offers a way to get around the normativity objection simply by denying that epistemology is essentially a normative enterprise. With respect to concepts in "classical" epistemology to which normativity is tied, Quine's reprogramming of how epistemology is done simply removes the need for any normative component. As a recap: compound observation sentences can be tested experimentally to tell us *how* we get to knowledge or belief, and the reliability and testability inherent in this process leads to the confidence or justification for knowledge or belief claims that come from employing this empirical methodology. Quine's view is at the extreme edge in the debate about the normative nature of epistemology. The naturalist who thinks the normativity objection has some weight need not go as far as Quine, however. That is, an epistemological naturalist can still affirm my (ii) while denying that philosophy has no autonomy from science. One way to do this is by holding a partial replacement view, whereby some epistemological claims are necessarily distinct in content, due to their normativity, from claims in descriptive psychology.[8]

There are good reasons for thinking that holding a partial replacement view is still thoroughly naturalistic. Partial replacement does nothing to sway one's commitment to (i) and (ii), for example. Central to the notion of partial replacement is the view that psychology and epistemology are two methods of approaching the same set of questions while ascribing neither method a privileged place over the other (as Quine does). Thus, the naturalist who thinks that the normative nature of epistemology makes it distinct from

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[8] See Kornblith, 7.

a science (descriptive psychology), at least in part, may still take the results of that science to have equal weight or force as those of normative epistemology. Kornblith admits we may not know if a partial replacement view is the right approach to epistemological questions until we have a complete descriptive psychology (which he takes to be a long way off[9]). Until we do, however, there is value for the philosopher to continue the pursuits of (normative) epistemology. At any rate, whatever the merits of the partial replacement view, my point is to emphasize that one can take the normativity objection seriously while still holding to epistemological naturalism. The normativity objection might be fatal to Quine's view, but a weaker expression of (ii) is still a live option. That is, the methods of the sciences can still be admired or inform one's epistemological claims, even if they do not go so far as to utterly replace them.

Stich similarly takes the normativity objection to be fatal to a robust formulation of (ii), where the experiential or empirical method, as exemplified in the sciences, is the only way of knowing. Recall that Stich takes the process of finding the right strategy for belief formation and revision to be central to epistemology. He also takes this process to be distinctly normative since we *must* use some set of cognitive virtues (truth, true belief, justification, warrant, etc.) as guides.[10] Since for Stich science is inherently value-free, science can only go so far in informing such epistemological questions. This rules out a robust expression of (ii) in that an empirical methodology is unable to complete that initial normative step.

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[9] Ibid., 8.

[10] Stich, "Naturalizing Epistemology…," 7.

What these examples show is that there are means available to get around the normative objection as a defeater for epistemological naturalism. So, even if the normative objection is seriously entertained, the best it can do is defeat a robust reading of (ii), which, despite Quine's plea, is not required for a genuinely naturalistic epistemology.

4.2: Naturalism as a Research Program

In Chapter 2 I expressed both epistemological and ontological naturalisms as substantive philosophical theses—the former adding something to bare empiricism and the latter adding something to bare physicalism. Another potential defeater for epistemological naturalism as I have expressed it calls into question whether naturalism should be characterized as a philosophical thesis at all. If it should not, then we have a straightforward reason to reject holding the view. Champions of this sort of defeater defend the view that naturalism is best thought of as a "research program" or metaphilosophical view rather than a substantive philosophical thesis. Often the reasons given for such a view have to do with the myriad ways in which naturalism is expressed or characterized by self-avowed naturalists. The idea is that, with so many seemingly incongruent views about what naturalism is, perhaps it is best to think of naturalism as something over and above those various views that still unites them in some way.[11]

Other reasons for not expressing naturalism as a thesis are more threatening. A potent example comes from Michael Rea (2002). Rea suggests that naturalism as a philosophical thesis, including all the varieties canvassed in Chapter 2, cannot be

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[11] See, e.g., Quentin Smith, "The Metaphilosophy of Naturalism," Philo, vol. 4, no. 2 (2001), 195-215.

substantive without also being vacuous, self-defeating, or wholly at the mercy of science. If Rea is right, then almost all expressions of what naturalism is must be abandoned, including my formulation of epistemological naturalism.[12] Rea claims that naturalists are united *at least* in a commitment to "methodological dispositions that preclude allegiance to views that cannot be called into question by further developments in science." This, plus the notion that advances in science would never force one to give up naturalism, lead to an apparent dilemma:

> So those who want to formulate naturalism as a thesis face a dilemma. On the one hand, if they formulate it as a thesis that cannot be overturned by scientific investigation, then naturalism turns out to be precisely the sort of thesis that naturalists are unwilling to accept. In the worst cases such formulations are either vacuous or self-defeating. On the other hand, if they formulate it as a thesis that could be overturned by scientific investigation, then (obviously enough) naturalism stands at the mercy of science.[13]

Rea offers plenty of motivation for thinking that this dilemma stands. Nevertheless, I think the dilemma falls apart almost before it begins by assuming a view of naturalism that is much too rigid. I have urged in both the last two chapters and just above in Section 4.1 that a rigid stance with respect to (i) or (ii) is inappropriate and unnecessary. Rea's first assumption, that naturalists have "methodological dispositions that preclude allegiance to views that cannot be called into question by further developments in science," is a good example of this rigidity. Sure, if the methods of the sciences constitute the *only* way of knowing, then we are not justified in giving allegiance to any view that falls outside science's purview. Quine, Devitt, and others surely hold that view, but it is not required by epistemological naturalism. We have just seen in the case of the

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[12] In Rea's defense, he considers this argument to be charitable in the sense that it allows him to reformulate naturalism as a "research program" for which there is quite a lot going.

[13] Rea, *World Without Design*, 51-52.

normativity objection (and we will see again below) that adding nuance to (ii) gives a much clearer (and more charitable) picture of what the naturalism project is all about. To put my complaint differently, Rea's first assumption does not capture the view of naturalists who are emphatically non-Quinean. To pigeonhole all naturalists into such a narrow and rigid view is a move toward straw-manning.

This pigeonholing leads to both horns of Rea's dilemma being ultimately confused. The motivation behind the first horn seems to be the claim that anything not capable of being overturned or falsified cannot be scientific. Let us grant this claim. Still the first horn is confused because, again, it only applies to the most robust formulations of naturalism—formulations that very few people would accept. Most formulations of naturalism—mine included—follow for a great deal of change over time in both ontological commitments and methodological allowances. Scientific theories change over time, and to a lesser extent so do methods, and so we should expect naturalism to change in accordance with science.

This does not mean that the *thesis* of naturalism changes with science, however, and so it seems perfectly acceptable for naturalism to be "overturned" periodically, just as it is acceptable for theories in the sciences to be overturned or be amended. For example, (i) makes no claim as to what the factual description of how we come to know things must be, *but only that there is one.* Scientific views evolve, and we would expect that one's view about how we come to know things would change as new developments are made in the relevant sciences. So while a particular view might be overturned by further developments in science, it does not follow that (i) is thus overturned.

That the thesis of epistemological naturalism is immune to developments in

science is more evident with respect to (ii). As a reminder:

> (ii) an experiential or empirical method, as exemplified in the sciences, is the only, or at least the best, way of knowing.

The idea that (ii) *could be* overturned by science is odd. It is equivalent to saying that by using the scientific method, we have determined that the scientific method is faulty. (ii) is a claim about the ability of science to get us to knowledge. The empirical methods of the sciences might change over time, but we could never show, by using those methods, that they fail to get us knowledge.

So we have reasons to think that the thesis of naturalism cannot be overturned by scientific investigation.[14] Rea and I are actually in agreement here.[15] Where he and I do not agree is in what he thinks should be drawn from this: that such a thesis is "precisely the sort of thesis that naturalists are unwilling to accept." The sorts of theses that the naturalist *qua* scientist is unwilling to accept are scientific claims that are not capable of being overturned or falsified by further developments in science (we already granted this to Rea). Yet neither (i) or (ii) nor their conjunction is a scientific claim. They are philosophical claims *about* science, *about* the reliability of its methods, but they are not direct products of science. In other words, Rea might be right if his first assumption were that "naturalists are united at least in part by methodological dispositions that preclude allegiance to *scientific* views that cannot be called into question by further developments in science." Yet with (i) and (ii) not being scientific claims, the dilemma for the naturalist disappears.

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[14] Of course, epistemological naturalism as a thesis might be overturned by some non-scientific investigation.

[15] See Rea, 52.

As to the second horn of Rea's dilemma, the naturalist can affirm that naturalism "stands at the mercy of science," but not in the sense that Rea is after. For Rea this means that naturalism is subject to being overturned by future scientific investigation. I have just argued that such an overturning would be possible only if naturalism is construed as a scientific thesis, which it is not. However, epistemological naturalism does stand at the mercy of science in the sense that it would not be a defensible thesis without the observable success of the sciences.

What is commendable about Rea's dilemma is that it does in fact serve as a defeater for the robust reading of (ii), where the empirical methods of the sciences are the *only* ways of knowing. The robust reading requires that (ii) be a product of science in order for us to know it. Since (ii) is not a product of science, the robust reading is too strong (I will return to this point below). However, most epistemological naturalists opt for a weaker reading of (ii), which turns out to be immune to Rea's dilemma.

4.3: Positivism, Falsifiability, and Robust Epistemological Naturalism

So far we have seen two defeaters that are inimical towards a robust reading of (ii). While these are both damning insofar as the normativity objection and Rea's dilemma have any force, there is a more direct defeater that has to do with whether holding a robust reading of (ii) is justified given its own standard for justification and knowledge. Think of a familiar and similar case. A commonly held view is that logical empiricism was brought to its knees in part because one of it's central tenets, the verification principle of meaning, did not meet the criterion of meaning that it claimed held universally, for it is not verifiable by experience of any kind (or implied by a set of "observation sentences," or whatever). If this narrative is right, the untenability of a

central tenet of logical empiricism led to its imminent demise. There is no such slam-dunk that can be given against epistemological naturalism *per se*, but there is a line of reasoning in the same ballpark worth pursuing, and it concerns principally a robust reading of (ii).

Epistemological naturalism says, at least, that we should, *to some degree or other*, give precedence to the ways of knowing that are modeled by the procedures and methods of the natural sciences. For the naturalist, by Devitt's lights, the degree to which we should give such precedence is maximized. Recall Devitt: "Using the empirical method from time to time does not make you a naturalist, else everyone would be one. What makes you a naturalist … is a commitment to there being no other method…"[16] This is the kind of robust expression of (ii) that leads to trouble when we consider the what the procedures and methods of the natural sciences actually are.

The feature of scientific practice that I think leads to trouble for robust expressions of (ii) is the notion of falsifiability. Of course, there is some controversy surrounding just what the scientific method (as a way of demarcating a scientific process from a nonscientific one) is, whether there is only one method shared by all sciences, what elements are essential to it and how those elements relate, whether the scientific method is only an idealized approximation of how science is done, and so on. As these issues are only peripherally relevant here, I am setting them aside. Also, I am not assuming that falsifiability is necessarily an essential feature to scientific methodology. Yet I think it is clear that a great deal of scientific practice features falsifiability in some version or other. For concreteness, we may call the scientific method that which is

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[16] Michael Devitt, "Naturalism and the A Priori," 45.

widely employed in the natural sciences; falsifiability is surely an aspect of this methodology. For my purposes, it is convenient to think of science in this somewhat narrow scope. However, it was pointed out to me (by Bill Ramsey) that science often involves things that do not fit neatly in this methodology, e.g., thought experiments, considering hypotheticals, discussing the ethics of scientific studies, considering what counts as a reliable observation, and other "armchair" inquiries. Fair enough. Given this, however, it is important to realize that the more inclusive our notion of scientific methodology becomes, the weaker our notion of *what science is* becomes. In the extreme cases, epistemological naturalism will turn out to be a vacuous commitment.[17]

At any rate, Devitt claims the empirical methods of the sciences to be the only ways of attaining knowledge or justifying beliefs. Presumably, Devitt takes this proposition to be something he knows, or at least is justified in believing. Thus his claim suffers from a similar malady as the verification principle of the logical empiricists. That is, this bit of knowledge (or justification) is not falsifiable *from within the framework of the empirical sciences*. There is no conceivable empirical observation that can be made to show Devitt's proposition false; likewise, there is no conceivable empirical observation that can be made to verify Devitt's proposition. If we take the notion of falsifiability as integral to the scientific method, then Devitt does not know, or is not justified in believing, his own expression of epistemological naturalism. Neither would we be. Again, this is the case whether we take something like the Popperian stance of claiming that whatever is not falsifiable is not scientific or a weaker view whereby falsifiability, or at least testability, is still taken seriously as a central component of the

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[17] For a nice discussion on this, see Alexander Paseau, "A Puzzle About Naturalism," *Metaphilosophy*, Vol. 4, No. 5 (October 2010), 643.

scientific method.

As with the last two defeaters we have looked at, this argument is only of use against the most robust formulations of epistemological naturalism. The cumulative upshot is that epistemological naturalism, particularly (ii), should not be expressed robustly. If Devitt is right that being an epistemological naturalist means endorsing a robust reading of (ii), then nobody should be an epistemological naturalist. A better approach is to nuance (ii) to allow for degrees of commitment to the empirical, scientific methodology as a means to knowledge and justification. If this makes everybody more-or-less naturalist, so be it; this is at least a better option than holding an indefensible view.

There are a number of ways that (ii) can be expressed without being saddled with the difficulties of the robust view. For example,

> Weak EN: the procedures and methods of the sciences have a strong propensity to produce true over false beliefs, and thus should be accorded high epistemic status

is compatible with claiming that the methods of the sciences are not the *only* means by which we can attain knowledge. That is, it is consistent to hold Weak EN while also affirming both that there are other avenues for attaining knowledge open to us and that there are types of knowledge that are nonscientific (e.g., normative claims). The naturalist who endorses Weak EN need not worry about the defeaters from normativity, Rea's dilemma, or falsifiability.

A different tack open to the epistemological naturalist is to adopt Stich's weakened expression of (ii), whereby some, but not all, epistemological questions can be

answered or informed by science.[18] This is stronger than my Weak EN since it allows one to claim that an empirical scientific methodology is the only way for us to attain knowledge except in domains necessarily outside of science's purview due to their content (e.g., normativity); it is up to the individual to specify, in ways that are non-question-begging, just what those domains are; opinions may vary.

Here is another way to show the difference between robust and weaker expressions of (ii): the robust expression of states that, for any proposition *p*, we should accept *p* iff science sanctions p.[19] This eliminates any knowledge claims for any propositions that are nonscientific (whatever one thinks "science" connotes). The weaker expression of (ii), by contrast, can be thought of as the claim that we should accept p if science sanctions p, plus whatever amendments one takes to be necessary. The weaker conditional is what allows for degrees of commitment. Endorsing conditional naturalism instead of the stronger biconditional formulation does not mean, however, that one's view of science and the reliability of its methods is in any way compromised or lessened. Rather, it is merely a different perspective on the scope of science that is not subject to defeaters (not the least of which is self-referential incoherence).

4.4: Naturalized Epistemology as Objectified Epistemology

So far I have discussed three defeaters that take aim at a robust expression of (ii). In this section I shall present an argument to be made against (i) by turning back to van Fraassen's criticism of "objectified" epistemologies—those that consist "in a factual

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[18] I discussed this view in Chapter 3 and above in Section 4.1.

[19] This way of wording (ii) is from Paseau, 642.

theory writing project about cognitive functioning."[20] For clarity, recall (i):

> (i) what the procedures and methods of the sciences have taught us about the world and ourselves will produce an epistemology with empirical content—a systematic factual description of how we come to know things.

(i) is the component of epistemological naturalism that takes Quine's plea to incorporate epistemology into psychology seriously; it is a view about *what epistemology is* that takes science to be the sole basis for the theory writing. In the present discussion, we might think that van Fraassen's notion of objectified epistemology quite obviously holds Quine's view as Exhibit A, but van Fraassen counts just about all major epistemological theories on offer as being objectified regardless of whether the theory is scientific or not.[21]

In a broad context, van Fraassen is concerned with how we are to deal with conceptual revolutions in general, and scientific revolutions in particular. The received science of the day tells us a great deal about the world, but such a representation will almost certainly go through a radical change and spawn a new framework. One of the desired features of any new such framework is the ability to account for the past successes of previous frameworks.[22] On the flipside, a problem for the prerevolution perspective is opening the possibility that it is rational to entertain the notion that things

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[20] Bas C. van Fraassen, *The Empirical Stance* (New Haven: Yale University Press, 2002), 75-78.

[21] For example, externalism, internalism, reliabilism, inductivism, foundationalism, Plantingian reformed epistemology, and so forth, all count as objectifying epistemologies to van Fraassen, even though none of them is a "pure" case given the criteria laid out. They all contain a factual theory writing project even though "factual" is not always thought of in scientific terms. See *The Empirical Stance*, 78.

[22] See van Fraassen, 65-66.

are some way that we presently think of as absurd.[23] Van Fraassen is perhaps an unlikely bedfellow for me, at least given his strong commitment to empiricism—the latter being what motivates (i). However, his argument that dealing with conceptual revolutions is an intractable problem for objectified epistemologies is useful here; namely, in providing a potential defeater for the component of epistemological naturalism that is expressed by (i).

Dealing with conceptual (scientific) revolutions is a hard problem for the empiricist and so, *a fortiori*, it is a hard problem for the epistemological naturalist. The problem is two-fold. First, if epistemological naturalism is, in part, a systematic factual description of how we come to know things (based on what science tells us about ourselves), there is no way to preserve the falsifiability of the going view of cognitive functioning; the going cognitive theory would have to view any paradigmatic shift as error or malfunction. Secondly, and related, any such epistemological view will fail to give a view of knowledge that is invariant under scientific revolutions.[24] With the occurrence of the relevant kind of scientific revolution, then, this sort of epistemological naturalism would die along with the scientific theories that ground it. I will expand on these two points in turn.

With respect to the first point, consider van Fraassen:

> If we are to write a theory about our cognitive activities and their adequacy, we'll have to draw on the very theories that encapsulate our present view of the world. But if we do so the result will simply rule out as impossible any way of coming to

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[23] Van Fraassen, 73. This point is particularly relevant to van Fraassen's argument in favor of his (unfortunately-named) voluntarist epistemology, which by his lights is free of the problems that riddle objectifying epistemologies.

[24] Ibid., 81. Van Fraassen takes this to be an unsolvable problem for any objectifying epistemology.

know that we ourselves don't fit our present view of the world.[25]

In other words, any such naturalized epistemology will rule out the possibility of a conceptual transformation, and thus the potential for the view to be overturned by new evidence. Van Fraassen clarifies with a hypothetical case:

> Imagine such a theory of knowledge. Suppose for example that it is based on a science that describes us as animals born with instincts and drives that shape response to experience, with all experiential access circumscribed by these animals' physiology. Then that theory of cognition cannot have as a theorem that under certain realizable conditions we will come to know that we are not thus. Quite the contrary! It will imply that any conceptual revolution taking us out of that current scientific view would be an example of cognitive dysfunction, of failure, of error, and fall under the heading of how error is to be explained.[26]

The problem is that such conceptual transformations do occur (and, for van Fraassen, their imminence in any domain of science is a possibility). So, the proponent of particular view of cognitive functioning that is weaved into (i)—as "a theory about our cognitive activities and their adequacy"—has two courses of action open to them in the face of such a transformation: to count the transformation to be erroneous or otherwise in error, or to abandon their expression of (i) altogether. Neither course is a particularly happy result.

Another point bears emphasizing. Van Fraassen can be read as if he buys into a strong Kuhnian view where incommensurability is a defining feature of pre- and post-revolutionary scientific paradigms. An objection to the Kuhnian stance is that *single paradigms* do not often dominate in the way needed to give the incommensurability

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[25] Ibid., 79.

[26] Ibid., 79.

thesis its force.[27] If this is right, if multiple paradigms are generally present in a given scientific enterprise, then the incommensurability thesis is weakened substantially. This is because as the number of paradigms increases, incommensurability becomes less likely. Suppose such an objection is successful against Kuhn's view. If van Fraassen were indeed following Kuhn, it would *ipso facto* be an objection against his own *general view* of scientific revolutions. However, even if this objection is granted, I do not think it holds in the present case. The reason is that if epistemological naturalism is to include a commitment to (i), that means a commitment to a particular (single) theory of cognitive functioning. If more than one theoretical paradigm were operable, the actual details of the epistemological theory—the "factual description of how we come to know things"—would never get off the ground. The latter requires consensus, and that is exactly what competing theories fail to offer.

Recall my second point: that an epistemological view formed solely on the basis of what empirical science tells us about ourselves and our cognitive functioning will fail to give a view of knowledge that is invariant under scientific revolutions. A significant transformation in cognitive science would force us to abandon our previous cognitive framework and thus the interpretation of (i), of what epistemology is, that is tied to it. For the epistemological naturalist, this line of reasoning is a straightforward indictment of (i). The naturalist must be willing to change their views to accommodate new science. Yet, if van Fraassen is right, the naturalist that takes the project of epistemology just to be a project in the sciences will not be able to account for any conceptual revolutions in

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[27] See Godfrey-Smith, 99, for a discussion of this objection.

those fields.[28] This by itself does not defeat (i) *as a thesis*, but it trivializes it in an important way: it precludes committing oneself to any particular scientific view of cognitive functioning that could form the basis of an epistemological theory. In other words, the epistemological naturalist may affirm that science is capable of undertaking a factual theory writing project about cognitive functioning, but it cannot affirm anything (e.g., actual scientific results) beyond this. Thus (i) becomes trivialized because, since (i) is a claim about what epistemology *is*, the epistemological naturalist can say nothing other than that it is a theory of cognitive functioning that comes from results in science. The theory cannot be filled out. As such, the epistemological naturalist does not gain anything by holding (i), but neither is anything much lost; I thus see no need for the epistemological naturalist to be concerned, at the present time, with defending (i).

Van Fraassen's notion of "objectified" epistemologies includes practically every going theory in contemporary epistemology, but I do not think his criticism, in general, has the force he thinks it does. The reason is that most epistemological theorizing, despite claims to being "factual" yet nonscientific, is not subject to the imminent threat of conceptual revolution. Conceptual revolutions in epistemology are few and far between. However, I do think van Fraassen is on target with respect to an epistemological theory that requires a filled-out version of (i). The reason is similar: an epistemological theory that takes current scientific consensus to be the foundation of its theory-writing is subject to the imminent threat of conceptual revolution. Such revolutions are much more common in the sciences than in philosophy. I suspect scientific revolution to be most

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[28] This is not to say that *any* scientific view will be unable to account for future revolutions, but only those scientific views that constitute the theory-writing basis for an epistemological theory.

imminent in younger fields like cognitive science, neurology, and descriptive psychology—precisely the fields one would need to draw from to construct a theory, in the spirit of (i), of what epistemology is.[29]

4.5: What We Are Left With

While I take the set of defeaters discussed in this chapter to be inimical to epistemological naturalism, they do not lead to the conclusion that epistemological naturalism is dead or should be abandoned, so there are still some gains to be counted. Some forms of epistemological naturalism - namely the "weak" ones—are immune. The three defeaters given for (ii) are independent and thus may be accepted or rejected independently. For example, some naturalists might find the normativity objection to have little force but take the falsifiability defeater to be decisive. Even so, I think it is best to think of this set of defeaters as forming a cumulative case against a robust reading of (ii). The robust reading overstates both the case for and the scope of epistemological naturalism. There is little to be gained by clinging to the robust reading, and many problems (actual or potential defeaters) can be avoided by taking a more moderate stance. As such, Weak EN (or something like it) is the best position for the epistemological naturalist to endorse. By weakening (ii) in this way, however, no naturalistic credentials are lost; it is just a way asserting them such that they are not subject to the aforementioned defeaters.

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[29] The view expressed here is much less critical than van Fraassen's actual view. By his lights, such naturalized epistemology just amounts to "philosophical activity that has the form of scientific theorizing but is not at all part of genuine empirical science." See van Fraassen, 242 n26.

Insofar as my van Fraassen-styled argument is successful, (i) does not seem to be of much use, due to its triviality, to the epistemological naturalist (at least at present). The utilization of the methods, theories, or results of the sciences in one's approach to epistemology is what the naturalism project is all about. Of course, those features are reflected in endorsing (i), no matter how trivial, but they are already reflected (quite strongly) in a moderate commitment to (ii). As such, the hard-line endorsement of (i) that we get from Quine is overkill, particularly in light of the arguments against it above. At any rate, it certainly is not needed to demonstrate one's commitment to science in approaching epistemological questions.

CHAPTER 5

THE NATURALIST'S USE OF THE APPARENTLY NON-NATURAL: MODALITY AS A CASE STUDY

The last few chapters have been largely concerned with issues surrounding epistemological naturalism. As part of that discussion, however, I argued that a *prima facie* justification for holding ontological naturalism comes from endorsing epistemological naturalism.[1] The reason is that since epistemological naturalism takes the methods of the natural sciences to be the best (or only) way for us to make reliable truth claims about the world, it is natural to restrict one's ontology to what the sciences tell us about the world. More importantly, I argued that endorsing epistemological naturalism does not *require* one also to endorse ontological naturalism; the latter is not entailed by the former. This largely has to do with the degrees of commitment that come with epistemological naturalism. Yet, as it turns out, many epistemological naturalists are ontological naturalists; the views fit together nicely to form a systematic philosophy. This does not mean, however, that ontological naturalism is without problems. It may enjoy *prima facie* justification, but some pressure needs to be put on that *prima facie* clause. As a way of doing this, there are broad reasons an epistemological naturalist might not endorse ontological naturalism. Generally, such reasons have to do with the

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[1] This argument is contained in Chapter 3.

scope of science or ontological commitments that, by nature, fall outside of that scope (however broad). For example, Peter Hacker complains about Quine's expression of ontological naturalism. Quine thinks ontological naturalism should be expressed as the view that "it is within science itself, and not in some prior philosophy, that reality is to be identified and described." Hacker's complaint is that "reality," as understood by Quine, is too broad a concept for science to cover: "If I identify a dandelion on the lawn, Beethoven's Opus 132 on the radio, a smell of onions in the kitchen, am I identifying 'reality'? And have I done so 'within science?'" The idea is that we would need a bizarre notion of "science" to think of it as the final and only authority on doxastic pronouncements about what exists.[2] In this chapter, however, I offer a different and narrower kind of challenge by looking at how ontological naturalists try to accommodate metaphysical theories of modality.

5.1: Ontological Naturalism and the World of Abstracta

Broadly, ontological naturalism states that the world as described by the natural sciences is all there is. (I provided a series of ways in which this view is expressed in Chapter 2.) To Armstrong, for example, this means that anything that exists has a location in space-time and enters into causal relations.[3] It is important to remember that ontological naturalism does not equate to bare physicalism. There is an added claim that it is through science alone that we know what stuff the world is composed of. Schmitt's

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[2] P.M.S. Hacker, "Passing by the Naturalistic Turn: On Quine's Cul-de-Sac," *Philosophy*, vol. 81, no. 316 (April 2006), 232.

[3] See Armstrong, "The Nature of Possibility," *The Canadian Journal of Philosophy*, vol. 16, no. 4 (December 1986), 91-92; Armstrong, "Naturalism, Materialism, and First Philosophy," in *Contemporary Materialism*, Paul Moser and J.D. Trout, eds. (New York: Routledge, 1995), 35-46; Armstrong, *Sketch for a Systematic Metaphysics* (New York: Oxford, 2010), 1.

expression of the view points this out nicely:

> *Ontological* naturalism is the view … that only *natural* objects, kinds, and properties are real. ... Since ontological naturalism is supported by the success of natural science, and success is success in recognizing what is real, it would do best to define 'natural' as 'what is recognized by natural science.'[4]

So science serves as the constraint for developing one's ontology, and what counts as natural is whatever is describable and explainable by the sciences. This is a way of making philosophy in general, and metaphysics in particular, consistent with (or, more strongly, continuous with) the natural sciences.

There is also a sense in which scientific practice presupposes, to some degree or another, the various objects of study of traditional metaphysics. The lurking problem for the ontological naturalist comes in "locating" such concepts in the empirical and material world of the sciences. One such category, normative facts, I have already discussed. The challenge there is to place normative phenomena in the natural world.[5] Critics (most famously J.L. Mackie) like to point out that the existence of moral facts or properties would be "queer" or utterly strange compared to everything else in the universe. Of particular interest to me here is how abstracta serve as tools in doing science. For example, objects (if there are objects) are thought to have properties that explain their behavior, natural and real numbers are used to count and measure, actual states of affairs obtain in the natural world, possible states of affair might obtain, laws of nature (if there are such laws) govern the patterns and events described by states of affairs, classes and sets are useful tools for distinguishing and dividing phenomena and entities, and the like.

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[4] Frederick Schmitt, "Naturalism," in *Companion to Metaphysics*, Jaegwon Kim and Ernest Sosa, eds. (Oxford: Basil Blackwell, 1995), 343.

[5] See De Caro and Macarthur, 2-4, for a nice discussion of normativity and naturalism.

Indeed, it is hard to give a description of the features of the world we live in without making use of abstracta in our explanation.

Dealing with abstracta is difficult in any metaphysical framework, but it is worth noting that it is particularly onerous for the ontological naturalist. Non-naturalistic metaphysics feels no need to constrain what counts as 'natural' to whatever is explainable and describable by the sciences, or no need to limit ontological claims to that notion of 'natural.' Thus, non-naturalistic metaphysics in some ways has an easy time of explaining the existence and function of various abstracta. On some accounts, for example, propositions exist, but they are not concrete entities and do not enter into causal relations; states of affairs are just sets of propositions; actual events occur when propositions obtain in our "world." Likewise, the non-naturalist can describe possible events and entities as denizens of logically distinct alien worlds, etc. The point is that the non-naturalist is free to posit the existence of such abstracta in forming an overall ontological picture of the world, even though they are not 'natural' in the way that tables and chairs are. Yet consider again the ontological naturalist's constraint that reality consists of "nothing but a single, all-embracing spatio-temporal system." At first blush, anyway, it is strange to think that when our (or any) spatiotemporal system came into being it contained things like propositions, numbers, states of affairs, or possible entities.

Of course, ontological naturalists have offered a number of frameworks for making sense of the use of abstracta in the sciences (particularly numbers, laws of nature, and classes and sets) that are purportedly naturalistic. It would be too tall an order for me to discuss and evaluate all of them here. What I want to do instead is focus on metaphysical views of modality, which seem under-discussed in the naturalism

literature.[6] Again, there are obvious non-naturalistic contenders: Lewisian modal realism (wherein modal facts are concrete), Meinongian realism, Kripkean/Plantingian ersatz abstractionism (wherein possible worlds are maximally consistent sets of propositions), fictionalist theories (wherein claims about possible worlds are analogous in some way to claims about fictions), and so on.[7] Vast theory differences exist in this space, but it seems that none of those options is open to the ontological naturalist, because they all make (heavy) use of things that fall outside our spatiotemporal world. This is perhaps why there are few detailed and explicitly naturalistic metaphysical theories of modality. I shall discuss three of them that I take to be sufficiently representative.

Armstrong, for starters, has spent decades developing a naturalistic modal theory.[8] In short, he offers a way of providing truthmakers to possibilities that is "ontologically inexpensive" in comparison to, say, Lewis's view. The reason is that he takes all possibilities to supervene on the actual, such that they come with the actual world

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[6] It is not a knock against naturalism that modal theories are often passed over or avoided, as this is a general feature in philosophy. As Michael Jubien notes, "...only rarely are those who actually rely on worlds prepared to say exactly what they are, that is, to offer an ontological characterization."

[7] 'Ersatz' as used here is Lewis's way of referring to possible world theories that do not take the worlds to be concrete. Following that tradition, most philosophers use "ersatzism" as a cover term for all abstractionist (and sometimes fictionalist) modal theories. For more on modal realism, see David Lewis, *On the Plurality of Worlds* (Malden, MA: Blackwell, 1986); for a defense of neo-Meinongianism, see Graham Priest, *Towards Non-Being. The Logic and Metaphysics of Intentionality* (Oxford: Clarendon, 2005); for abstractionist views, see Saul Kripke's "A Completeness Theorem in Modal Logic," *Journal of Symbolic Logic*, vol. 24, no. 1 (1959), 1-14, and Alvin Plantinga's *The Nature of Necessity* (Oxford: Clarendon, 1974); for the classic factionalist view, different from the one described below, see Gideon Rosen, "Modal Fictionalism," *Mind*, vol. 95, no. 395 (July 1990), 327-354.

[8] This began in earnest with *A Combinatorial Theory of Possibility* (New York: Cambridge University Press, 1989). See also "The Nature of Possibility," *The Canadian Journal of Philosophy*, vol. 16, no. 4 (December 1986), 575-594 and the much more recent *Sketch for a Systematic Metaphysics* (New York: Oxford, 2010).

"automatically, at no ontological cost."[9] Another more recent modal theory comes from Michael Jubien (2009). Baldly stated, Jubien's modal metaphysics turns classical talk about possible worlds (as "ways things could have been") into talk about properties (that physical objects or the world itself could have instantiated but in fact do not)—where properties are given a naturalistic explication.[10] Jubien takes the problems (e.g., being non-natural) with most metaphysical theories of modality to be attributed to an "object fixation," where too much thought is given to the various properties a given object might have had, etc.; this fixation leads us to posit possible worlds as a means of explaining such possibilities. Jettisoning that approach, Jubien thinks we can get a naturalized view of modality by thinking of *being a physical object* as a more fundamental category than, say, being a horse or a statue.[11] Fitting nicely with ontological naturalism, everything that exists will share that property, since everything that exists resides in the actual spatio-temporal world.

The final case I look at is the view defended by James Ladyman and Don Ross (2009). A central argument therein is that understanding the modal structure of the universe is key to developing any fully naturalized ontology. The modal view comes in a defense of a metaphysical version of structural realism that is dubbed Ontic Structural Realism (OSR):

> OSR is the view that the world has an objective modal structure that is ontologically fundamental, in the sense of not supervening on the intrinsic

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[9] See *Sketch for a Systematic Metaphysics*, 67-69. The ontological cost is low because Armstrong takes possible worlds to be nonactual fictions. This is explained in detail in the next section.

[10] Michael Jubien, *Possibility* (Oxford: Clarendon Press, 2009), 42.

[11] See Ibid., 86-87.

> properties of a set of individuals. According to OSR, even the identity and individuality of objects depends on the relational structure of the world.[12]

This is obviously a much different view than we get from Armstrong or Jubien, since there is no supervenience relation between the modal structure and some set of actual objects. Van Fraassen, as a robust empiricist, would rather get rid of metaphysics altogether by jettisoning objective modality[13], but Ladyman and Ross see the retaining of objective modality to be a clear advantage over van Fraassen's constructive empiricism.[14] In fact, Ladyman and Ross see their view to be necessary to "avoid regarding the success of scientific induction as miraculous."[15] OSR is so central to Ladyman and Ross's metaphysical picture that virtually everything else they claim depends on it in some way. Thus, far from attempting to sidestep the thorny issue of modality in their ontology, they make their modal view central to their overall theory. This makes their view the most "extreme" of the three views I am considering.

5.2: Metaphysical and Nomic Necessity

Modal claims are ineliminable in the sciences. Topics as broad as causality, natural laws, regularities, biological capacities, counterfactuals, and probability are imbued with modal language and explanations: there could have been more continents than there are; water always boils at 100 degrees celsius at sea level; if species X evolved with trait Y, then such and such would have happened; if conditions A and B had not

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[12] Ladyman and Ross, 130.

[13] See his *Scientific Image* (Cambridge: Cambridge University Press, 1980), 202.

[14] Ibid., 99. Ladyman and Ross are quick to point out that their view is still fully empiricist, claiming that OSR could easily be understood as modal structural empiricism.

[15] Ibid., 153.

been met, life could have failed to develop. This much is noncontroversial. What is important to realize is that these are not epistemic pronouncements about modality; they are not claims about what can be known about the natural world given our evidence. Instead, they are claims about how the world *is*, what the world contains, how the world could have been. They are metaphysical. Given how widely used modal claims are in the sciences, it is thus crucial, for the philosopher of science at any rate, to have access to a metaphysical framework that allows us to make sense of them. As such, what the theories mentioned above attempt to do is provide the metaphysical underpinnings for the modal statements we find in the sciences. That is, they each offer a way for determining the truth-value of modal statements in a way that fits the constraints of ontological naturalism.

Before moving on to examining the theories, one final point is worth making. I have said that science is imbued with claims about necessity and possibility. The notion of necessity is particularly emphasized in talk about laws of nature (alternatively: about scientific laws as approximations of laws of nature). Say, for example, that it is a law of nature that nothing can move faster than light. Everything obeys this law non-accidentally. There is some disagreement, however, about what kind of necessity is relevant here. One view is that straightforward metaphysical necessity is operative in laws of nature: in no "possible world" do things move faster than light. A weaker view, often dubbed "nomic necessity" or "natural necessity," denies that metaphysical necessity is operative since we can conceive of the laws of nature not obtaining; the laws are

contingently necessary (or physically necessary) given the way our universe is.[16] Nomological necessity is thus immanent or this-worldly, having nothing to do with other possible worlds.[17] There are many issues involved in this debate (e.g., whether *a posteriori* truths are metaphysically necessary, whether conceivability should guide our modal theory-writing, or whether some notions of necessity are reducible to others), but each of them is peripheral to the analysis below. What I want to do is figure out if any of the purported naturalistic theories of modality is consistent with ontological naturalism, and it makes no difference which of the above views about laws of nature is correct. So, for my purposes, metaphysical necessitarianism and nomic necessitarianism are both live options.

5.3: Armstrong—Bringing Possible Worlds Down to Earth

As mentioned above, Armstrong sets out to construct a metaphysics of modality that explicitly fits the constraints of ontological naturalism. The spatiotemporal world is all there is, and so all we have to draw on to construct a useful theory of modality. That is, there are no extra-spatiotemporal entities that can be postulated to account for our notions of possibility and necessity. In his words: "...my objective is to give an account of possibility which is in no way other-worldly."[18] At any rate, this is the stipulation Armstrong is operating under although, as I will argue later, he violates it. This means,

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[16] For a nice discussion of nomic necessity, see Kit Fine, "The Varieties of Necessity," in *Conceivability and Possibility*, T. Gendler and J. Hawthorne, eds. (Oxford: Clarendon, 2002) and John F. Halpin's "Nomic Necessity and Empiricism," *Noûs*, vol. 33, no. 4 (1999), 630-643.

[17] Some interpretations of nomological necessity do take it as having to do with a particular set of worlds outside of our own, namely, those worlds whose laws of nature agree with the laws of nature in our world.

[18] Armstrong, *A Combinatorial Theory of Possibility*, 1.

quite obviously, that we can make no claims about the existence of abstract objects—the tool used by most non-naturalist modal theorists to explicate the notions of possibility, necessity, and possible worlds. Employing abstracta in one's explanation is, by Armstrong's lights, non-naturalist just because abstracta are thought of as things that lack causal efficacy. If something plays no causal role in the physical world, we have no good reason for positing its existence.[19] He admits that this is not a decisive reason, but it is bolstered by his strong epistemological naturalism based on "bedrock common sense and natural science."[20] Interestingly, Armstrong thinks that it *is* permissible to posit extra-spatiotemporal entities if they have some explanatory value for some spatiotemporal phenomena; this will become important shortly. However, abstract objects as traditionally conceived have no such explanatory value.

So, instead of a realist theory like Lewis's or alternatives that rely heavily on abstracta as actual entities, Armstrong lays out a combinatorialist theory that uses only the constituents of the natural world as building blocks. I will present the bare bones of the theory, highlighting the points relevant to my criticism that follows.[21] There are three building blocks in Armstrong's ontology that can be thought of as basic: individuals (first-order particulars), properties, and relations. We are told little about individuals apart from that they exist and are "simple." In keeping consonance with science, Armstrong notes that it is an empirical matter (i.e., to be determined by science) how

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[19] Armstrong, *Sketch for a Systematic Metaphysics*, 2.

[20] Armsrong, *A Combinatorial Theory of Possibility*, 7. This is, indeed, Armstrong's stated reason for accepting ontological naturalism.

[21] The full theory summarized here is found in Part III of *A Combinatorial Theory*...

many individuals there are—finite or infinite—and just *what* the individuals are.[22]

Properties are likewise simple—having no constituents or parts. They are universals, which here means that any property can be possessed by any number (1 or greater) of individuals. Properties are often thought of as abstract objects—that category of things that Armstrong wants to avoid, but he thinks that the naturalist cannot get by without them. For one, it is properties that confer causal powers on their instances. More importantly, Armstrong allows himself to posit properties because of his view of truthmakers, which he takes to be existing entities in the actual world.[23] As an example, consider a billiard ball. It seems "implausible" that the ball itself could be a truthmaker for propositions like "the ball is red," "the ball has a mass of X," and the like. Given his view of truthmakers, he must posit objective properties of color, mass, etc., to make sense of those propositions.[24] Relations are likewise simple and are universals. Like individuals and properties, what relations there are is an *a posteriori* question to be answered by our best science. Armstrong makes no commitment to any specific existing properties or relations. Importantly, however, we are told that there are no uninstantiated properties or relations (after all, we do not want to bloat our ontology with superfluous entities). If we think of properties as "ways that individuals are" and relations as "ways in which a certain number of individuals stand to each other" then it becomes clear that

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[22] He gives an option for what the simple individuals might be: point-instants. See his *A Combinatorial Theory of Possibility*, 38.

[23] See his *Sketch for a Systematic Metaphysics*, Chapter 8, for a detailed explanation of his truthmaker theory. It is a version of the correspondence theory of truth.

[24] This is Armstrong's example. See Ibid., 11.

all properties and relations are instantiated by actual individuals.[25]

The "combinatorial" aspect of Armstrong's view comes in stages. In the first stage, individuals, properties, and relations combine to form states of affairs. Such states of affairs, having existing simples as constituents, serve as truthmakers for propositions.[26] *Atomic* states of affairs are logically independent of all others and *molecular* states of affairs are conjunctions (perhaps infinite conjunctions) of atomic states of affairs. A point that will become important below is that molecular states of affairs supervene on the existence of its conjuncts.

With the building blocks in place, Armstrong continues his combining of those basic elements to give us the modal theory—an explication of "possibility" and "possible world." Of course, every actual state of affairs (atomic or molecular) is possible; this much is trivial. The tricky bit is dealing with *mere possibilities* (or merely possible states of affairs). For every proposition expressing an actual state of affairs that is contingent, its negation is merely possible, though not true. For example, I am sitting right now but it is possible that I am not sitting ($p \ \& \ \Diamond \neg p$); it is a mere possibility that I am standing. The important thing to note about mere possibilities is that *they do not exist.* Armstrong holds the commonsense view that things either exist or do not exist. Since the only things that exist in his ontology are actual states of affairs, merely possible states of affairs do not exist. Take Armstrong's words:

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[25] Armstrong, *A Combinatorial Theory of Possibility*, 43. Note that we cannot have bare individuals either.

[26] If you think that Armstrong problematically utilizes properties (since they are abstract objects and abstract objects are generally thought of as non-natural), you will likewise think that about his use of states of affairs. I think there is something to this objection, but I set it aside here.

> A merely possible state of affairs does not exist, subsist or have any sort of being. It is no addition to our ontology… It would not even be right to say that we can refer to it, at any rate if reference is taken to be a relation… The parallel is with the ostensible (but very useful) reference that we make to ideal gases, frictionless planes and so forth, in scientific investigations.[27]

Another way of putting this is in terms of combinations. Any combination that we find of the basic elements of the actual world (individuals, properties, relations) in terms of a state of affairs is a possibility (that happens to be actual, to exist). The merely possible states of affairs are *recombinations* (the combinations that don't exist); that is, mere possibilities are "non-existent recombinations of actual elements."[28] Finally, possible worlds are conjunctions of possible atomic states of affairs (including the merely possible ones). Armstrong gives some qualifications for this construal of "possible world," but they are not relevant to my arguments below.[29] The main point of all this is that "possibility" is reduced to combinations of simple, existing elements of the world. The bulk of those combinations (the *mere possibilities* (and their combination with other atomic states of affairs—the *merely possible worlds*)) do not exist.[30]

As with any systematic modal theory, Armstrong's theory has had its share of criticism regarding its plausibility and coherence.[31] Leaving those issues aside, I want to argue that his combinatorial view does not fit nicely with ontological naturalism in the

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[27] Ibid., 46.

[28] Ibid., 54.

[29] See *A Combinatorial Theory of Possibility*, 47-48, for details.

[30] Ibid., 48.

[31] For examples, see Theodore Sider, "Another Look at Armstrong's Combinatorialism," *Nous* 39 (2005), 680-696; Fraser MacBride, "Could Armstrong Have Been a Universal," *Mind* 108 (1999), 471-501; Holly Gail Thomas, "Combinatorialism and Primitive Modality," *Philosophical Studies* 83 (1996), 231-252; Jaegwon Kim, "Possible World's and Armstrong's Combinatorialism," *Canadian Journal of Philosophy*, vol. 16, no. 4 (December, 1986), 595-612.

way Armstrong thinks it does. Ontological naturalism tells us that all that exists is the spatiotemporal world that is the object of study for the sciences. Everything in that world is concrete (leaving aside for now tricky and controversial items like magnetic fields, waves, etc.). Yet Armstrong's combinatorialism is explicitly a fictionalist theory of modality. Fictionalist theories explain modality by substituting something (namely, fictions) for concrete possible worlds, a la Lewis, or ersatz worlds of abstract entities. Nonactual possibilities, while they are not true of the actual world, are true of some fictional world. So, while the fictionalist can say that nonactual possible worlds do not exist, they must say that fictions exist. The relevant upshot is that fictionalist theories still have to posit some abstract entities to fill out the details of a given theory.

> This is no less true of Armstrong's combinatorialism. Consider:
>
> > We set up non-existent 'merely possible worlds' alongside the actual world, using certain principles, Combinatorial principles as I maintain. 'It is possible that p' is then said to be true if and only if a world can be found in which p is true. Like a true statement about ideal gases, however, the truth-maker for 'it is possible that p' is to be found in *our* world.[32]

It is not as though Armstrong needs to posit only one fictional world to account for all of the mere possibilities. He needs to posit a potentially infinite number of fictions to account for all the possible recombinations of atomic states of affairs. Even assuming fictionalist theories are coherent, this view seems to be exactly what the ontological naturalist does not want. The central problem of non-naturalist theories of modality, from the ontological naturalist's perspective, is that they require one's ontology to explode in size, beyond the natural world, by positing various abstract or concrete possible worlds. In other words, the ontological naturalist wants a theory of modality that

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[32] Ibid., 51.

is "ontologically cheap" (Armstrong's phrase), but we hardly get this from combinatorialism.

Oddly enough, Armstrong so much as admits this about his view. The guiding force behind the combinatorial view is a robust epistemological and ontological naturalism. Taking this high view of science, Armstrong notes how scientists sometimes posit theoretical entities, even though they do not exist, *because they are useful*. On his view, this gives him license to do the same with respect to fictionalist modal worlds:

> Physical scientists find such conceptions as the ideal gas useful in organizing their talk and calculations about actual gases. They do not think that the ideal gas exists, either in this or in another world. Nevertheless, they distinguish between true and false statements about the ideal gas. It is true that it obeys Boyle's law. The ideal gas is only one example among many. Consider also point-masses, parallelograms of forces, frictionless planes, perfectly elastic bodies, economic man and so on. Why should not philosophers, including Naturalist philosophers, treat possible worlds in this fashion? They have proved their worth in discussions of problems about possibility and necessity, counterfactuals, personal identity and so on. Nevertheless, they lack explanatory value, just as the ideal gas lacks explanatory value. So why not treat possible worlds as we treat the ideal gas: as things which do not exist, or at least as things which we have no reason to postulate, but which it is nevertheless convenient (if ontologically misleading) to talk about? It does seem like getting things on the cheap. But the widespread and practically essential device of *unrealistic idealization* in natural science suggests that the practice is not a disreputable one. Realism is better than Fictionalism - provided Realism is not carried too far.[33]

Positing theoretical (fictional) entities is useful for philosophers because they inform so many philosophical domains. The natural scientists do it, so the naturalist philosophers can do it, too. Let us concede this point to Armstrong. After all, he is not arguing thus in order to show that his view is true, but only that there is legitimate motivation behind it. The problem is that we still have no reason to suppose that his combinatorialism is the best option for the naturalist philosopher, which is his stated promise. Think of the case

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[33] Ibid., 13.

of everyone's favorite target—Lewis's modal realism. Lewis knows of course that the ontological bloat resulting from his theory is enormous, but in his view a little bloating is a fine trade-off for philosophical utility. Lewis tells us we should believe in his plurality of worlds "because the hypothesis is serviceable…" and because "the benefits in theoretical unity and economy are well worth the entities."[34] Notice that these are the same reasons Armstrong is giving above. These are also the same reasons often cited by other non-naturalist modal theorist who posit ersatz views.

So, in terms of motivation, all the going modal theories, naturalist and non-naturalist alike, seem to be on par. However, Armstrong's view, unlike (say) Lewis's, is not a complete view. From Armstrong's presentation of the view, he gets us to the claim that there are fictional, merely possible worlds, but we do not know anything about those worlds beyond that. Armstrong seems to recognize this point:

> What is wanted, then, is an Actualist, one-world, account of fiction, and one that will accept both the merely possible and the impossible as fictions. I do not know in detail what account to give, but it would be truly surprising if no such satisfying account were available.[35]

My point is that Armstrong has not provided any convincing reason why his view is best suited of the options for the ontological naturalist. Quite the contrary, as a final example will show. Armstrong provides what he calls *the causal argument* in favor of the view that entities with no causal efficacy should not adorn our ontology. Because such entities lack causal powers, there is no way for us to know whether they exist. He justifies his fictional states of affairs by noting how they supervene on entities that are in fact causally

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[34] David Lewis, *On the Plurality of Worlds* (Malden, MA: Blackwell, 1986), 3-4.

[35] Armstrong, *A Combinatorial Theory of Possibility*, 49-50.

efficacious.[36] Yet, then we get an argument for why such an "ostensibly" referring modal theory that seems to be ruled out by the causal argument might in fact be compatible with naturalism. This is done by way of an example. Suppose that someone has a strange representational theory of perception where sense-data are the actual objects of perception (as opposed to an external, physical world). That person might still *ostensibly* posit the existence of an external world, even though there is no reason to suppose that world exists, as a means of methodological useful explanation for dealing with sense-data.[37] Such a move is justified, says Armstrong, and so "might we not introduce possible worlds in the same spirit?"[38]

If this maneuver is permissible for the naturalist, then it seems that it can be made in favor of *any* going modal theory, including Lewis's. What reason then do we have to favor Armstrong's view over the alternatives? There is apparently no naturalistically relevant reason to prefer it over other fictionalist, ersatz, or otherwise "useful" theoretical constructs of modality. They each stake a claim to their own usefulness, serviceability, or theoretical unity. That is, they each claim to provide a complete view of how truth values are supplied to modal statements, even if they disagree on the details of how this is accomplished. My view is that, so far, the ontological naturalist is in a pickle. Given the above arguments against combinatorialism, the choices seem to be to (i) find another theory that is not saddled with problems like Armstrong's view is, (ii) reject (or at least redefine to triviality) the notion of ontological naturalism, or (iii) reject the commitment

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[36] Ibid., 11. Interestingly, Armstrong defines the notion of supervenience *in terms of* possible worlds.

[37] This example is found in Ibid., 8-12.

[38] Ibid., 13.

to objective modality altogether (in line with van Fraassen and Quine). In the next two sections, I will explore options that purportedly satisfy (i).

5.4: The Actual Jubien World

Another explicitly naturalistic modal theory is that of Michael Jubien (2009). In some ways, Jubien's view is much more streamlined and austere than that of Armstrong. It is a naturalist account because, for one, it is an actualist account—where all the tools needed for explicating modal notions are present in the actual world. The actual world is in fact the *only* world, although it is not wholly concrete.[39] As with the last case, I will sketch Jubien's view, emphasizing the bits relevant to its fit with ontological naturalism.

The naturalist approach, which is modeled by the sciences, is to adopt an ontology that best serves the need of a theory—in this case, a modal theory; the simplest theory is best as long as the theory has the utility it is designed to have. Jubien's central complaint against existing modal theories is that they breach this principle, sometimes to an egregious degree. As is often the case, Jubien picks on Lewis especially, although, as we shall see, he takes his criticism to apply to *all* modal theories that posit possible worlds (realist or otherwise). Talk of possible worlds likely originated with Leibniz, but it is Lewis who begins the tradition of taking "ways things could have been" to mean that there are entities called possible worlds. Jubien thinks this is bizarre. The reason is that "things" can be read as objects, states of affairs, or the world (what other options are there?). However, for any of these, "ways things could have been" would just be properties that those entities might have had. On this face-value reading we have no need

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[39] Jubien points out, as various places, that he is offering an actualist one-world account of modality. E.g., see *Possibility*, 74 and 77.

of positing possible worlds.[40]

It might seem odd that a naturalist theory would just replace one strange entity (possible worlds) with another strange entity (properties). Jubien has his reasons, including the reading of "ways things could have been" just given; we can interpret that phrase without using possible worlds, but not without using properties. At any rate, properties are a much better posit because they have "deeper antecedent philosophical credibility" than the notion of possible worlds. Thus, "as putative entities whose existence we can't verify in any remotely direct way, properties are overwhelmingly more plausible."[41] Of course, we cannot look out into the world and point to properties as we could for ordinary physical objects, but positing their existence has a theoretical utility and explanatory value that cannot be underestimated. Plus, ordinary language is rife with property talk. So, Jubien is happy with positing the existence of properties in a very traditional (indeed, Platonic) sense of the term—as abstract entities without causal efficacy.

Generally, objections to the existence of properties have aligned from two fronts: issues having to do with identity conditions and, more relevant here, issues about the apparent non-naturalness of properties. Jubien dispels the latter worry for reasons just given (and much more besides). He can accept that the spatio-temporal world is all there is, but deny that "spatiotemporal" equates to "physical" or "concrete." Properties exist in that world (the actual world!), but they exist nowhere and nowhen. They are abstract. Apart from this, Jubien gives no detailed general theory of properties, in part because

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[40] Jubien, 41-42.

[41] Ibid., 78.

there is no obviously naturalist way to do it.[42] As to the first worry, Jubien goes to great lengths to defend his views of identity conditions and mereological essentialism, but those issues are not relevant here.[43] Finally, given that we need properties, and given the extent to which we quantify over properties in ordinary language, we might as well take the liberty of assuming that the world of properties is abundant and not sparse.

So properties are abstract and abundant, but we need them. Properties best explain the broad "ways things could have been" characterization of modal notions. We will see just how properties can be employed to explain modal notions below. First, however, it is worth mentioning a few other reasons Jubien gives for rejecting *any* possible world conceptions of modality (regardless of how the worlds are conceived). The first reason is that talk of possible worlds begins with a problematic assumption. Mentioned above in the case of Lewis, there is a grounding assumption to all possible world conceptions of modality that Jubien calls the *fundamental tenet of world theory*: that something's being possible is equivalent to its truth in some possible world. Once that tenet is accepted, one needs to first say what the worlds are and then provide the semantic analysis.[44] If we must say what the worlds are before offering an analysis of modal statements, there could be strange results, particularly if we cannot say how many such worlds there are:

> Suppose there are just a few, but that all of them happen to include stars. How plausible is it to think that if this is how things really are, then we've just been wrong to regard the existence of stars as contingent? Or suppose it happens that there are no other detached realms. Would we happily accept the consequence

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[42] Ibid., 54. He does not take this fact to be a negative one.

[43] See Jubien, 22-39 and 43ff, for more on these views.

[44] Ibid., 60.

> that we exist necessarily, that we've been overly humble to think we're mere contingent beings?[45]

These examples are humorous, but a serious point is being made: that calling detached realms "possible worlds" just "begs the question of their relevance to our intuitive notion of possibility." Things are more sober than that, however. The fundamental tenet cannot provide an analysis of modal notions, which is what a modal theory is supposed to do, "until we have been told what the possible worlds are like and why what goes on in other possible worlds has anything to do with what is true in a given possible world."[46] Given that, Jubien thinks we can skip that unnecessary first step and proceed straight to the modal analysis without the baggage of having to describe the possible worlds. That is, if we can get ourselves to abandon the *fundamental tenet*, talk of possible worlds become irrelevant to the actual analysis in a modal theory.

With relevance in mind, another reason for rejection possible world theories has to do with the notion of counterparts. I think this reason is persuasive against at least some possible world theories, but I mention it only in passing. Counterparts are posited as representations of things in the actual world—as ways those things might have been. This is a way of accounting for modal claims like "I could have been a long-haul trucker." In some other possible world, my counterpart *is* a long-haul trucker but we are otherwise similar. Jubien complains that representation does not get off the ground with mere similarity (it does not even require similarity). What representation requires is intentionality. That is just what "representation" means. In Jubien's example of this, a waxwork statue at a museum represents (however precisely) a certain person because that

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[45] Ibid., 61.

[46] Ibid., 70.

is the intent of the statue's maker. We would not say that the statue also represents that person's identical twin or clone, even though they are qualitatively physically similar.[47] There is another point relevant to counterparts. Suppose that counterparts actually do represent things in the actual world; suppose my counterpart represents me as a long-haul trucker. Jubien thinks that is cannot follow from this that I might have been a long-haul trucker because we are perfectly capable of representing things *as they could not be*. Thus, the notion of counterparts and representation seem impotent in terms of telling us anything substantive about possibilities.[48]

Finally, perhaps the most potent objection Jubien has to possible world theories is that they cannot provide a genuine analysis of the notion of necessity. The best they can do is provide a cosmetic analysis that is grounded in accepting the fundamental tenet of world theory. Consider Jubien:

> Suppose it's necessary that all As are Bs. The central-tenet *analysis* is that in every possible world, all As are Bs. So the necessity arises from what goes on in all the worlds taken together. There is nothing intrinsic to any A-containing world, even in all of its maximal glory, that *forces* all of its As to be Bs. It's as if it just *happens* in each such world that all of its As are Bs, that from the strictly internal point of view of any world, it's *contingent*, a mere coincidence. But then shouldn't we expect that this internal contingency will not be repeated in every world, that there will be worlds where some As 'happen' not to be Bs? After all, nothing within any given world prevents it, and these are supposed to be *all* the possible worlds.[49]

In other words, the possible world analysis is that necessity *just is* a long string of contingencies taken together. This is odd, and it gets more and more odd to think of all of these contingencies lining up as you add more worlds. This is especially odd given

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[47] Ibid., 64-65.

[48] Ibid., 65 ff.

[49] Ibid., 74-75.

that most possible world theories have a massive (perhaps infinite) number of worlds. Moreover, it is not an analysis of "necessity" to speak in terms of recurrent contingencies precisely because we get no explanation for why the contingencies recur; we get no explanation for why the contingencies are true in each of the worlds in which they are true.[50]

I have just given a handful of reasons for why Jubien rejects all modal theories that utilize the notion of possible worlds. If those reasons are persuasive, he has cut off the naturalist from endorsing just about every modal theory on offer. By his lights, his alternative has the virtues of being simpler, ontologically cheaper (we need only posit properties, which not is not a controversial move), and more properly an actual analysis.

As should be clear by now, the key to Jubien's modal theory is his rich, Platonic view of properties. Part of the problem that has lead modal theorists to posit possible worlds is an "object fixation"—where the fundamental aspects of the physical world are thought of as particular objects. In that construct, when we quantify over a given entity, we are quantifying over a tree, a statue, a dog, or whatever the entity is. This is how ordinary language works. The better approach, says Jubien, is to think of physical objects as the fundamental aspects of the physical world. In that construct, quantifying over the same entity means quantifying over a physical object that just happens to be a tree, a statue, a dog, etc.[51] Thus, such quantification is really a set of claims: about an entity (physical object) and about a property (being a tree, statue, dog). This latter approach is preferred because it is more in line with first-order logic and because "being

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[50] See Jubien, 75.

[51] See Jubien, 85-86 for the details of this view.

a physical object" is the only natural property that is shared by everything and thus is in fact more fundamental.

To get to the modal view, Jubien gives us some explanation of different sorts of properties (of concrete entities and of properties) and relations, some of which are intrinsic to their instances.[52] The upshot is that some properties entail others, and this is how we make sense of the notion of necessity. (Examples: "being yellow" entails "being colored;" "being a horse" entails "being an animal.") Modal metaphysicians typically offer an explanation of the entailment relation, in two steps, like this: "for P to entail Q is for the proposition that all P's are Q's to be necessary. Then they generally take necessity to be truth in all possible worlds."[53] In other words, *the force of the entailment relation rests on the notion of necessity*. Jubien thinks this is precisely backwards. Because properties have intrinsic natures, the notion of necessity rests on (or consists in) the entailment. For example, consider the claim that something that instantiates "being a horse" also instantiates "being an animal." "All horses are animals" is necessarily true because of the intrinsic nature of those properties and not because of some feature that horses share in the set of possible worlds. That is, there is something about "being a horse," namely an intrinsic property that makes it so that a horse is an animal.[54] Put yet differently, when we think of the "ways things could have been," a horse could never fail to be an animal; this is not because of a feature of the possible worlds, but because of intrinsic features (properties) of horses and animals.

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[52] The details are not relevant here, but see Jubien, 88-92.

[53] Ibid., 92.

[54] This example is from Jubien, 93.

Just as necessity rests on the relation of entailment between two properties, possibility rests on a relation that Jubian calls *compatibility*. For example, the possibility of there being black swans has to do with whether "being black" and "being a swan" are compatible. We thus have two relations that ground necessity and possibility that fit nicely together: "compatibility and entailment are 'dual' notions and so are easily interanalyzable: for example, for two properties to be compatible is for neither to entail the negation of the other."[55] So, while Jubien's view does require a complex (or "abundant") set of properties, he takes those properties to be sufficient for providing an analysis of objective modality in the world. While this of course requires expanding one's ontology beyond the world of the concrete, it is an acceptable allowance because of the utility the theory provides. In terms of depth of analysis, clarity, and simplicity, it certainly is better than positing spatiotemporally isolated possible worlds, or ersatz worlds of propositions and sets, or fictional worlds. Jubien gives a nice summary of his view as follows:

> … Platonic properties are supposed to have fixed intrinsic natures. How they are in themselves depends in no way on the concrete realm. *Being a horse* would be no different intrinsically if there had been no horses, no different if all horses had been wild, no different if some had been blue, and so on. Similarly for *being an animal*. That one property entails another is a matter of fact on all fours with the fact that one horse is taller than another. Of course the former is a fact about the Platonic realm while the latter is not. So, where modal propositions may once have seemed to transcend the *actual*, they now seem only to transcend the *concrete*. The boundaries of possibility and necessity are not determined by nonactual circumstances, but rather by actual relations among properties.[56]

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[55] Ibid., 94.

[56] Ibid., 100. While I did not discuss the matter, Jubien thinks his view covers modality *de re* and *de dicto*.

The key bit for getting a big-picture view of Jubien's theory is that second-to-last sentence. Modal metaphysics has been focusing on explaining modalities in terms of something nonactual (e.g., possible worlds), which is anathema for the ontological naturalist. Yet modal pronouncements really cannot be explained given only the concrete world, and so to do so requires at least one "abundant" type of abstract object—properties. So says Jubien.

Let us take stock of where we stand. At the end of the last section, I suggested that (so far) we have three options: (i) find a modal theory that is not saddled with problems like Armstrong's view is, (ii) reject (or at least redefine to triviality) the notion of ontological naturalism, or (iii) reject the commitment to objective modality altogether (in line with van Fraassen and Quine). With respect to (i), Jubien's modal theory seems like a decent candidate for the naturalist. His view is simpler than Armstrong's. His view has the ontological upper hand in terms of simplicity by dealing with the actual as opposed to the fictional. His view is more "complete" (if he is right about possible world theories' failure to properly analyze the notion of necessity). With respect to (iii), I think it is safe to say that few would side with van Fraassen and Quine. There are a number of reasons for this. For one, most ontological naturalists, particularly those whose view is motivated by epistemological naturalism, are scientific realists. Van Fraassen's motivation for not recognizing objective modality in nature is that empiricism, on his view, means "to withhold belief in anything that goes beyond the actual, observable phenomena." Yet there are actual, observable phenomena that straightforwardly come with modal claims. It can be observed that consuming food X *might* raise one's blood pressure (with some probability attached); it can be observed that earth *might be* struck

by as many as Y meteoroids in the next year, and so on. These modal claims cry out for explanation, and denying modalities in nature means discounting (or ignoring) too much of scientific investigation and too many scientific results. I shall return to this issue shortly.

What about (ii)? As I will explain now, the claims just made about (i) and (iii) have implications for how (ii) should be approached. The point of this chapter is to examine explicitly naturalistic modal theories to see how they affect the justification for holding ontological naturalism. The central theme in how ontological naturalism is expressed is that our ontology ought to be populated with whatever science tells us there is and nothing more; or, the world as described by the natural sciences is all there is. Let us review a few such endorsements:

- Naturalism imposes a constraint on what there can be, stipulating that there are no nonnatural or unnatural, praeternatural or supernatural entities…. Nature comprises those entities and constructs made of those entities that the ideal physics, realistically interpreted, posits.[57]

- Ontological naturalism is the view … that only natural objects, kinds, and properties are real…. Since ontological naturalism is supported by the success of natural science, and success is success in recognizing what is real, it would do best to define 'natural' as 'what is recognized by natural science.'[58]

- Naturalism [is] the doctrine that reality consists of nothing but a single, all-embracing spatio-temporal system.[59]

- It is within science itself, and not in some prior philosophy, that reality is to be identified and described.[60]

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[57] Philip Pettit, "The Nature of naturalism II," *Proceedings of the Aristotelian Society*, suppl. vol. 66 (1992), 245, 247.

[58] Schmitt, 343.

[59] Armstrong, "Naturalism, Materialism, and First Philosophy," 35.

[60] Quine, *Theories and Things* (Cambridge: Harvard Univ. Press, 1981), 21.

We know that science is imbued with modal claims. Again, I do not think this is controversial. Following Quine, we might even say that "reality" is what those modal claims are meant to capture. Of course, one might reject object modality in line with (iii) as van Fraassen does, but I have just given some reasons why I take this to be an undesirable approach for the naturalist. The other option is to take the modal claims of science seriously such that a modal-theoretic framework is required to explain them. If either modal theory presented above is taken as the correct analysis of those modal claims, then science is implicitly committed to the existence of at least some abstract entities—be it Platonic properties, fictional worlds, etc.[61] For example, under Pettit's construal of ontological naturalism, Platonic properties would not be "unnatural" or "nonnatural" after all; they are a part of the natural world in the same way any concrete, physical object is. Or, under Schmitt's view, properties would be as real or natural as physical objects or kinds. Science would be committed to such entities even if they are not the direct objects of study for the sciences. That is, they may not be empirically verifiable or concrete, but they are needed to explain what we know via scientific investigation about what is empirically verifiable or concrete. Positing their existence is useful; it allows for theoretical unity; it is explanatory with respect to the natural phenomena that we observe. I say that positing such abstracta is useful, etc., because it allows a way of providing truth conditions for the modal claims we find in science. Providing truth conditions for statements of possibility and necessity is the central reason for giving any modal theory in the first place.

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[61] Note that this holds even if the modal theories described in this chapter are jettisoned in favor of a different, possible worlds approach to modality.

This is all well and good perhaps, since science might be committed to other abstracta (e.g., numbers) that I am not discussing here. Yet, then the relevant questions are not about science and its scope *per se*, but about the value of holding ontological naturalism. Once we have allowed some set of abstract objects into our ontology, because of their utility, the theoretical unity they provide, or whatever, what is to prevent the naturalist from bringing in other entities or abstract objects as explanations or analyses of the way the world is? What if immaterial yet causally efficacious entities, or mental entities, or God can provide a similar sort of explanatory value or utility in making sense of scientific observations? There seems to be no nondogmatic or *principled grounds* on which the ontological naturalist could prohibit such posits.

If there are no such grounds (and I do not think there are), if the ontological naturalist must be open to allowing such things, then it follows that they should be open *all the way*. That is, of course, provided those things meet the criteria set out for them.[62] The upshot is that ontological naturalism, despite seeming very restrictive, controversial, or prohibitive, is not really any of those things. Ontological naturalism of the properly weakened kind is really an inconsequential view to hold, since nothing significant follows from its endorsement. I do not want to say that ontological naturalist as a thesis is thus trivialized, because it is still substantive. However, it does not (or cannot) rule out nearly as much as the expressions of it (above) seem to indicate.

I began this chapter by noting that ontological naturalism has a special problem in dealing with the abstract world (not assuming there is such a thing). The concrete is obviously in the hands of the naturalist. The claim was that there are a set of

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[62] Such criteria have already been mentioned as the same one's allotted to modal constructs: utility, explanatory value, theoretical unity, and so on.

"apparently" nonconcrete entities that figure into naturalistic theories about the way the world is. The most obvious perhaps is numbers; but one can be a nominalist about numbers and still make sense of scientific use of them. I think modality is an especially difficult case. There are a host of modal theories that attempt to explain how our modal concepts and the use of such concepts in the sciences correspond to the actual world. Most of those use constructs that, on the face of it, look to be unacceptable to the ontological naturalist. Yet, in the theories that explicitly claim to be naturalist theories of modality, we just get more of the same. *Something* that is nonconcrete has to be utilized to make sense of the modal claims we make about what is concrete. It seems very difficult to get rid of the abstract. I do not mean to say that no truly naturalist theory of modality is possible, but just that we do not have one yet.

5.5: Ladyman Worlds—Structures All The Way Down

Finally, another modal view worth mentioning is Ladyman and Ross's view defended at length in their (2009). Their view is a possible candidate for a genuinely naturalist theory of modality, in the sense of not requiring the function of abstracta in the theory. It is worth mentioning for that reason, but all we can do now is give it a passing glance since they have yet to spell out exactly what their modal theory amounts to; they provide no analysis of the notions of necessity and possibility. The approach taken therein is that of an explicitly naturalistic metaphysics, by which they mean that it "is motivated exclusively by attempts to unify hypotheses and theories that are taken seriously by contemporary science."[63] No metaphysics that utilizes tools foreign to such scientific enterprises is allowable; this basically rules out all the tools, intuitions, and

[63] Ladyman and Ross, 1.

methodology of metaphysics traditionally conceived. In short, *ontic structural realism* (OSR) is the view that the fundamentals of ontology, from which everything else is built, are "objective modal structures." Again we are not told what the modality of the structures consists in, which is why I do not think OSR can be thought of as a modal theory. The only details we get are that "modal" can be read as "nomological" and that the structures are not causal.[64]

OSR does not take it that modal structures supervene on the properties of underlying objects (observable or unobservable). Rather, the view is that there are no objects whatsoever, and this is what makes structures ontologically fundamental or basic. Ladyman and Ross recognize that eliminativism about concrete objects in their ontology is the hardest thing to swallow for metaphysicians of all persuasions (naturalist or not), but it is what current physics demands on their view.[65] Talk of objects is just a useful heuristic or abstraction from fundamental structures. There are, however, features of OSR that should draw appeal from ontological naturalists. For one, the view comes with a very minimal ontological commitment—all there is are structures. For another, the view is thoroughly committed to scientific realism; it is just that physics always holds the trump card and physics, at the moment anyway, has little use for objects. What is traditional about Ladyman and Ross's realism is the commitment to objective modality, which they hold to be necessary for making sense of successful scientific induction.

Once Ladyman and Ross fill out their view of objective modality to produce and actual modal theory, we might have a candidate for an ontological naturalism that is

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[64] See Ladyman and Ross, 130ff.

[65] For more on this, see the discussion in Ibid., 153ff.

immune to the criticisms I offered above. Until then, however, I think my conclusions about ontological naturalism stand. Of course, I have only considered how modal metaphysics, as a case study, is utilized by avowed naturalists. Given those cases alone, however, ontological naturalism—insofar as the allowances that must be made to ontology to accommodate modality in the sciences—is a weak thesis. I do not mean "weak" in a pejorative since, but in a way corresponding to the weaker forms of epistemological naturalism. That is, the robust expressions of ontological naturalism that we get above have to be softened, or weakened, to allow for abstracta.

CHAPTER 6

CONCLUDING REMARKS

What I hope to have accomplished in this dissertation is a demonstration that naturalism is not a worry-free position in philosophy. I wanted to do this originally because that is exactly how naturalism is often portrayed given its place in contemporary philosophical orthodoxy. As I noted earlier, it seems as though giving something the label of 'naturalism' is a means of assigning it some high measure of credibility. I understand the sentiment, but it has always struck me as bizarre. Before setting out on this project, I had an affinity for epistemological naturalism and its stance toward science, and less regard for ontological naturalism, for reasons not entirely relevant to this project. My view has since changed as a result of the project, but not substantially.

Three distinct endeavors were undertaken in the previous chapters. The first was to get a clear, concise, working description of 'naturalism' that could be subjected to evaluation in later chapters. This was necessary, but was also difficult given the deluge of ways naturalism has been defined. My strategy was to reduce naturalism to two distinct doctrines: one compound epistemological view and one ontological view. These expressions are, I think, sufficiently broad to capture different ways of conceptualizing and expressing naturalism. I think, in general, naturalists of either stripe will be happy with my characterization of the views. Once those descriptions were in place, I went to

work arguing for the ways in which those views can be nuanced to account for certain problems or background commitments while still staying true to the naturalism project.

The next major task was epistemological. I argued for how both epistemological and ontological naturalism can be justified, both *prima facie* and in the face of potential defeaters. Neither view has much of a problem with respect to *prima facie* justification, but they each have problems with defeaters discussed later. There were four potential defeaters discussed with respect to epistemological naturalism. Each of them has force, but only against the stronger, "robust" readings of the view. I concluded that section by noting how epistemological naturalism has to be tempered to account for those difficulties. There are weak expressions of the view that play this role, yet while still remaining true to the naturalism project. I think these weakened forms of naturalism are actually not all that controversial, and so their place as orthodoxy would not be objectionable; they can be accepted by those coming from a surprisingly diverse set of philosophical approaches. However, I do not think that these weakened views are the ones now taken as orthodox.

Finally, I turned back to ontological naturalism to examine it in the face of one particular defeater—the possibility of having a truly naturalistic, metaphysical theory of modality. I argued that there is not a modal theory on offer that gives a naturalistic account of modality that is consistent with robust expressions of ontological naturalism. Thus, as things stand at the moment, ontological naturalism has to be weakened, as in the case of epistemological naturalism. The reason has to do with the ontological allowances that must be made to accommodate a theory of modality, since such a theory is needed given the profusion of modal notions in the sciences.

Overall, I think the project is an important one in philosophy. Naturalism is too often just assumed to be correct, but a whole lot of thought needs to be put into exactly what we mean by saying something is 'naturalistic.' So, while the naturalism project as a whole has something going for it, I do not think it should be taken as a given—in any domain. There are certainly some worries that have to be worked out. That is just par for the course in philosophy, I reckon.

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